# AIR FORCE

THE MAGAZINE OF AMERICAN AIRPOWER

4 MAY 1954
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# "four-pound pilot"

A four-pound proven, rugged and reliable gyro—laboratory accuracy on a production basis—is the key to the Arma Inertial Navigation System. This completely self-contained guidance system will be another significant contribution by Arma to pilotless aircraft and missiles operating in the tactical range. Arma Corporation, Brooklyn, N. Y.; Garden City, N. Y. Subsidiary of the American Bosch Corporation.

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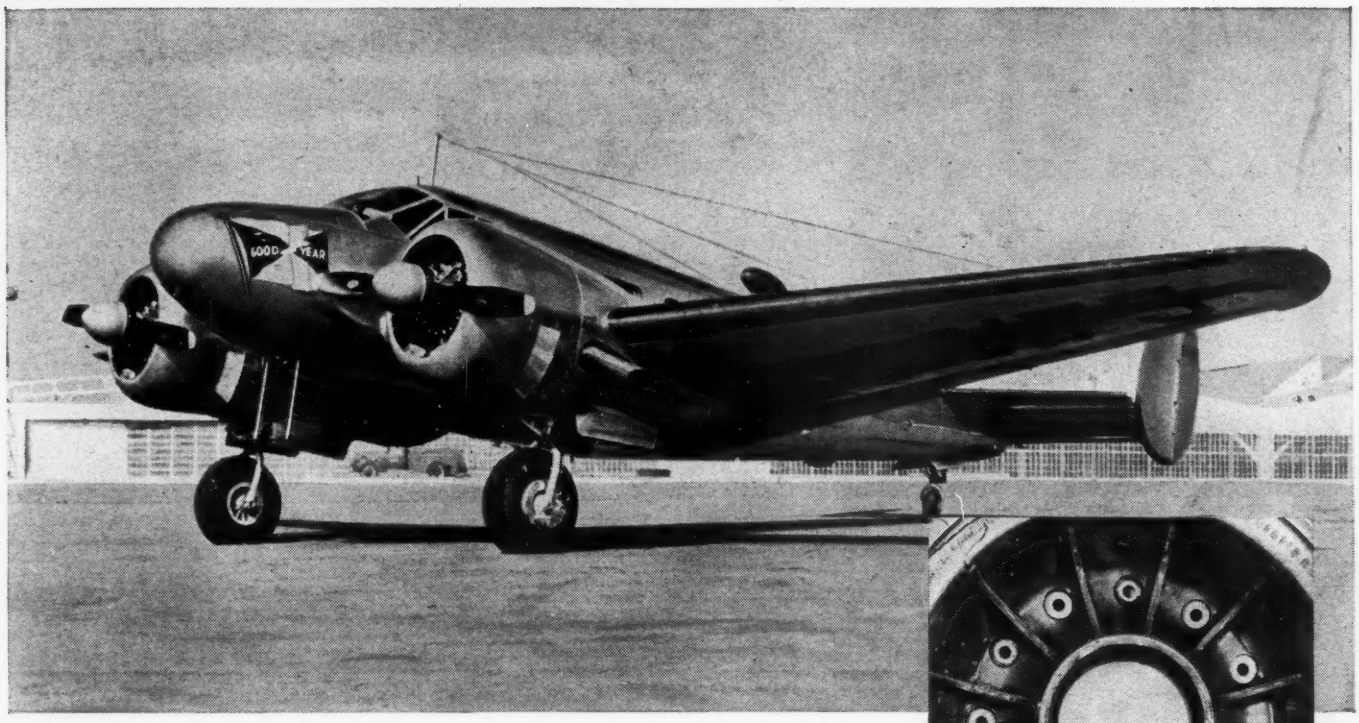
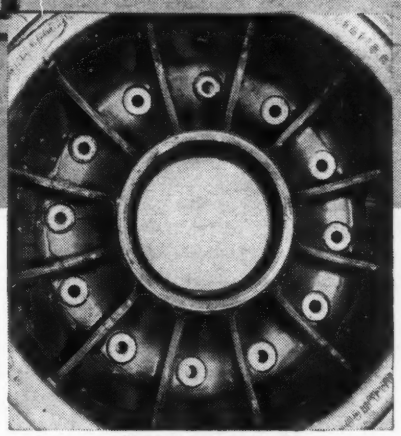
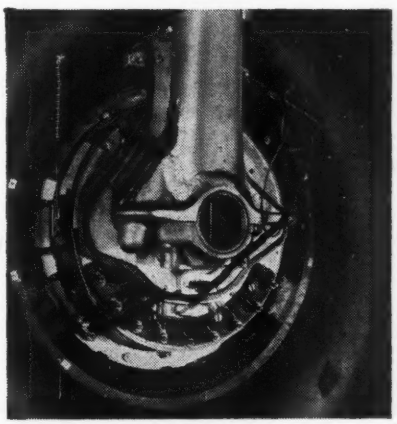
# WHAT LOADS ARE ACTUALLY APPLIED ON LANDING GEARS?

## —To Find Out, We "Wired" This Plane For Trouble!





First: Stresscoat for Laboratory Tests



Then: Strain Gauge Instrumentation for Comprehensive Flight Studies

IT had never been done before—an extensive *flight-test* study in which simultaneous recordings were made of all the component landing-gear loads affecting wheels and brakes, together with the resulting strain.

We selected our own Twin Beech as the guinea pig, and ultimately put it through every conceivable type of field maneuver during the course of 64 flights — *with strain gauge instrumentation of the gear at 135 points.*

But first, Stresscoat was used to tell us where to locate strain gauges. Then, to segregate loads the instrumented strut assembly was subjected to extreme conditions of drag, side, radial, and castering loads on special laboratory test equipment.

The results have proved the dependability of laboratory testing and have enabled us to go further, for they have opened up new knowledge concerning true service loads which was hitherto unknown.

It took 2 years in the doing — all because Goodyear insists on ascertaining rather than assuming the items which represent the facts of the problem, thereby helping to pioneer aviation progress.

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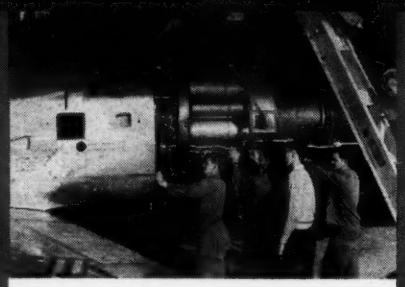
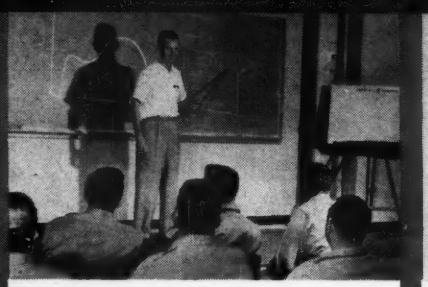
FU-104

## HOW G-E JET SERVICE ENGINEERING WORKS FOR YOUR G-E POWERED AIRCRAFT

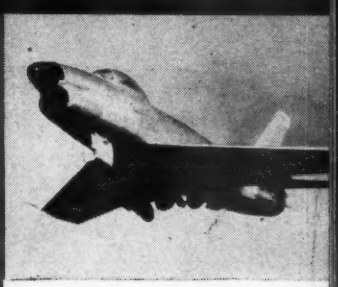
**ON THE CANNING LINE.** Technicians watch for engine mishandling, check packing procedures.



**INSTALLATION.** G-E tech reps are on hand 'round-the-clock to help personnel with installation and maintenance problems



**CLASSROOM SESSIONS** given by G-E jet engineers help pilots and mechanics have a better understanding of G-E turbojets.



**FLIGHT OPERATION.** G-E tech reps are available throughout the world—whenever, wherever needed.

# G-E jet service helps keep F-86D's

# READY FOR CONTINENTAL DEFENSE

### G-E service engineering at U.S. Air Force Bases helps maintain high percentage of aircraft readiness by speeding engine maintenance

General Electric jet service engineering has one all-important objective— to help G-E turbojet users get the highest possible utilization from their engines at all times.

For example, take the 71st Fighter-Interceptor Squadron at Coraopolis AFB, an Air Defense Command Base near Pittsburgh. There G-E tech reps work with USAF maintenance personnel to maintain high availability of North American F-86D's.

Besides improving engine maintenance and overhaul procedures, the tech reps lower turbojet repair time-cycles by applying new and improved service techniques developed from G-E operating experience.

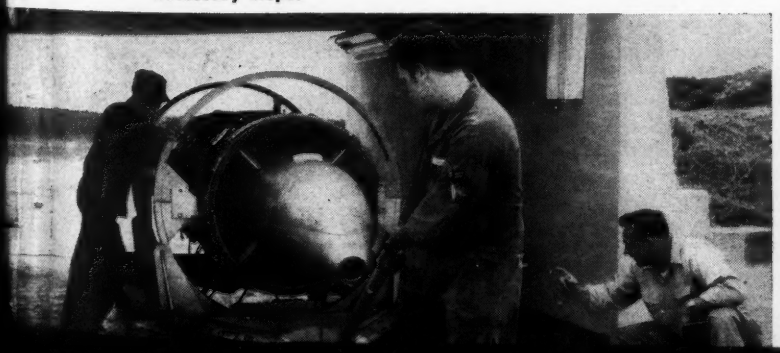
General Electric jet service engineering in the Pittsburgh area is, of course, part of G.E.'s world-wide jet service program. G-E tech reps are stationed in Japan, Greenland, Germany, England, Puerto Rico, Alaska, Italy, Africa, and Korea. In the United States, jet representatives are available to airframe manufacturers, the Air Force, and the Navy from coast-to-coast.

For further information on this program, contact a G-E Aircraft Specialist. He'll be glad to tell you how G-E service engineering can go to work for your aircraft—today, or five years from now. *Section 230-26, General Electric Company, Schenectady 5, N. Y.*

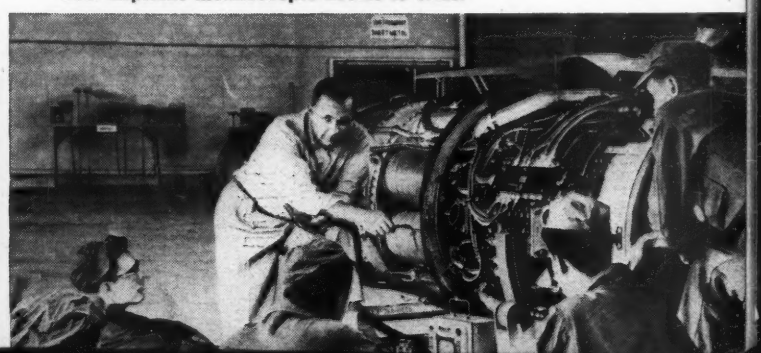
*You can put your confidence in—*

# GENERAL ELECTRIC

**READY TO TEST** a new G-E J47-17 engine, personnel of 71st Fighter-Interceptor Squadron listen as G-E tech rep outlines necessary steps.



**INFORMAL CLASSES** are conducted by G-E reps to orient USAF personnel on repair and servicing techniques. Below, G-E engineer explains thermocouple device to class.



# AIR MAIL

**Other Bad Habits**

*Gentlemen:* M/Sgt. Norman Winfield's article in the March issue of AIR FORCE, entitled "How A Non-Com Sizes Up His Officers," is so right.

The only complaint I have is that he refrained from mentioning many other well-known reckless habits of officers which undermine the morale of all military personnel and draw the condemnation of the public in general.

I would like to see this article reproduced in pamphlet form as a best seller, after the author has written at least two or three additional installments on the same subject.

The valuable material contained in all the recent issues of AIR FORCE Magazine justifies commendation for all concerned.

John Kocinski
Toledo, Ohio

**Good Coverage**

*Gentlemen:* I don't think Sergeant Winfield expects too much from officers, with one exception—the haircut once a week. There may be a few people whose hair grows like a bad debt, but generally speaking, the once-a-week haircut is as antiquated as the Keystone bomber.

It does no harm physically, but it does serious damage to the pocketbook, since the once-a-week trim was born in the days of the 10¢ haircut and the uncrowded barbershop.

The bunk tags of the majority of AF officers have either stopped swinging or are shuddering through the final arc. Many of us are having trouble keeping enough hair to warrant retaining a comb on active duty.

Let's be reasonable about this thing. Make it every two weeks and make toupees an item of general issue. That ought to cover the situation.

Capt. H. E. Swinney
New York, N. Y.

**Count Your Blessings, Airman**

*Gentlemen:* I wish to comment on the master sergeant with 7½ years service who wrote the letter, published in the March issue of AIR FORCE, concerning Sergeant Winfield's article "Cause of the Pause." I really feel sorry for this fella. Only a master sergeant and with 7½ years' service! Doesn't he realize how long some *good* men wait to make master sergeant? I can imagine what kind of an officer he would make. If he didn't make general in four years he'd probably resign because he was getting bad breaks. Can you readers imagine this man making master sergeant in 7½ years and then having the guts to say he wouldn't reenlist because he hadn't been selected for OCS? It goes to prove one thing: The Air Force has certainly made a big mistake by promoting without length of service requirements. This letter by the ungrateful master sergeant should be proof enough to the men in Washington who make the policies.

Now I'd like to make a few comments on Sergeant Winfield's article "Cause of the Pause." I agree with the sergeant that some benefits have dwindled, but let's consider a few facts.

What is the ratio of first three graders not reenlisting to the ones reenlisting? If the statistics were shown it would show a very unbalanced ratio, the higher figure on the reenlisting side. Why? You may say they have too much to lose toward a retirement. Can't afford to lose all these years. A man would be a fool not to consider retirement; but most non-coms know they couldn't make the money (with allowances, benefits, etc.) in civilian life that they are making in the service.

Do you realize how long you would have to work in a civilian job to equal the amount you make after retiring in twenty or thirty years? And what about the $10,000 free insurance? What about income tax? We only pay tax on our base pay; not on allowances. Wouldn't you say all these things are benefits? I would! Yes, and how about the free medical and dental care? Do civilian outfits offer these? We can't expect the government to take care of us hand and foot. We should take over some responsibility. And while we are on this subject, my family has not been denied medical or dental care since I have been with the Air Force.

Let's give the service credit where credit is due and balance the account.

If you people who have all these gripes think you can do better, I wish you could have a turn at making the policies in Congress and in USAF Headquarters. You would find out what a tremendous problem it is to keep your military force at a certain strength and try to please each individual.

We get more pay, allowances, benefits, etc., than any other country in the world, so why not be thankful for what we have. Before we gripe about all these benefits we are losing and not getting, let's consider the ones we have in comparison to the civilians in our own country and to the military people serving their country in other parts of the world.

This, then, is my side of Sergeant Winfield's article. If we all stop to consider the good things we have, and be thankful, the Air Force would be a happier place to live in, and we, as individuals, would be a great deal happier.

T/Sgt. Clarence W. Grossman
Boulder, Colo.

**Drastic Measures Needed**

*Gentlemen:* I want to congratulate you and Sergeant Winfield on your fine articles, and let you know how much they are appreciated. Only in this way will you know you have some avid readers on this subject, and I might add for each answer you get there are dozens of people who feel as I do but do not take the trouble to write.

I, for one, am deeply concerned at seeing the really good men scramble out of the service as fast as they can and am wondering why someone who can doesn't try to do something drastic immediately. When I first came into the service in 1944 a college graduate was hard to find in my outfit; now you can find one in almost every room—but they will not stay with the present treatment. With the ambitious non-coms getting out that leaves a few who have no other alternative for various reasons and a great many culls. I feel certain that is not what the public wants for its money.

You have pretty well covered all the gripes that I might make but please don't stop. Just keep hammering away like the advertisers do and eventually you will be heard, for you are doing a great patriotic duty to the Air Force as well as the public by your writings.

Tech Sergeant

*(Continued on page 7)*

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# *"ANGELS 40!"*

Production and delivery of the new higher powered, rocket-firing Mark 4, CF-100 to the Royal Canadian Air Force is underway to equip squadrons at additional bases around Canada's vast territorial border.

With its radar tracking and fire control system, the Mark 4 can roam farther and exceeds the range of any other interceptor in the world. A CF-100 recently flew a 2100 mile R.C.A.F. non-stop mission in 3 hours and 50 minutes.

The role of this long-range, all-weather interceptor, powered by two ORENDA jets, also designed and built by AVRO Canada, is the defense of North America against attack through the Arctic. However, because of its inherent versatility the CF-100 could be readily adapted to a variety of tactical operations.

"Angels 40!" in flight crew chatter means "get to 40,000 feet in a hurry". R.C.A.F. pilots report their CF-100's do that—in any weather, day or night.

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# Good Management—
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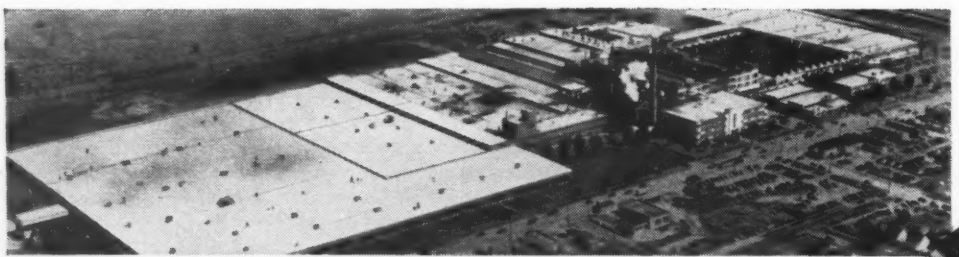
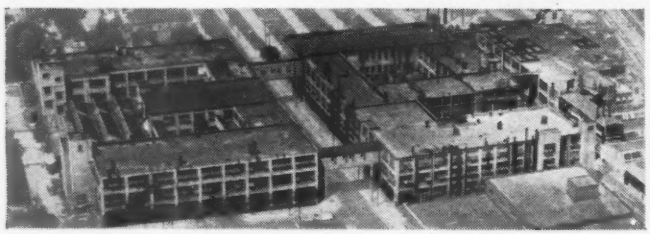
. . . and good management is the key to AC's ability to turn out many of the electro-mechanical marvels which guard America's shores.

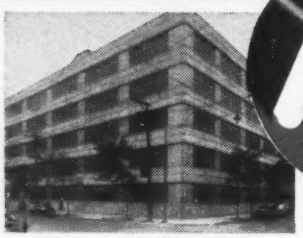
Through good management, engineers with the necessary training, experience and imagination can be used to best advantage. It takes good management again to provide these men with the specialized equipment and facilities they need—when and where they need them.

That kind of good management can build a "homing instinct" into antiaircraft shells—as AC is doing in the T-38 Skysweeper Fire Control Systems. AC is building pin-point accuracy into Gun-Bomb-Rocket Sights that are modern miracles of engineering and design.

AC is always looking for *new* problems in this field. If you have such a problem, good management may be the answer—and the "know-how" and experience of more than 700 AC engineers and scientists are at your service.







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**Staff Artist**

*Gentlemen:* I was doubly pleased at receiving my March issue of AIR FORCE when I noticed that the cover illustration and several inside illustrations were drawn by an artist on our staff here, Ralph Ballantine.

I was the coordinator for the artwork on the "Physiology of Flight" and it certainly is rewarding to see that your magazine is presenting the copy and artwork for a wide audience.

T. E. Sanschagrin
Kling Studios, Inc.
Chicago, Ill.

**Timely Gospel**

*Gentlemen:* My congratulations to your magazine and Ed Hogan for his timely presentation on Physiology of Flight.

My primary duty assignment in the Air Force at the present time is that of "Physiological Training Officer." One might say that Mr. Hogan and I are preaching the same gospel, although in my case it's a full time job.

I hereby request permission to reproduce locally, in part or whole, both of Mr. Hogan's articles, for dissemination to all flying personnel at my base.

1st Lt. Norman M. Lefritz
Ellington AFB, Tex.

• *Permission granted.—The Editors.*

**Behind the Scene**

*Gentlemen:* I read your February article "That Others May Live" with great interest since I am a member of an Air Rescue squadron that has done a great job in the Korean conflict.

True, the pilots and medics who were involved in rescue operations deserve credit, but I feel that enough is not said of the officers and men behind the scene who never will be on a "mercy mission." Namely, the maintenance section, whose main responsibility is to keep the aircraft in flying shape, the men in communications, motorpool, operations, and supply. After all, these men are the basic foundation of any air rescue squadron.

Congratulations on a thoroughly enjoyable article.

A/3C Ronald W. Wallace
Seoul, Korea

**Square Dealer**

*Gentlemen:* Last June I became chairman of Republicans for Americanism and I intend to see to it that the power of this committee will be used, among other things, on behalf of a square deal for the Air Force.

You can cooperate with us by bringing to light in AIR FORCE any graft, waste or inefficiency which you might know about.

The Air Force must not suffer because of any selfishness and errors on the part of a few, and efforts to cover up these things must not be permitted; otherwise, the entire organization will suffer.

Chester L. R. Houston
Los Angeles, Calif.

**Remler Microphone**

*Gentlemen:* We appreciate very much your coverage of our new Remler Transluctance Microphone in your March issue, in "Tech Talk."

The description of the microphone was very well written, except for one small point. The Remler Transluctance Microphone consists of a Remler Magnetic Microphone with integral transistor preamplifier, which is furnished as a complete unit for direct replacement for most types of carbon microphones.

H. Norman Eierman
Manager, Industrial Div.
Remler Company, Ltd.
San Francisco, Calif.

**Special Requests**

*Gentlemen:* I want to take this opportunity to tell you how much I enjoy AIR FORCE Magazine. I would like to suggest printing one or two full-page pictures of planes each month which would be suitable for framing.

Donald Bruce
Billerica, Mass.

*Gentlemen:* I enjoy the magazine, but I wish you would get some stories of the outfits of World War II occasionally. I don't mean this as criticism. Best wishes on your great work.

Charles Musto
Brooklyn, N. Y.

**Unfinished Story**

*Gentlemen:* "Here's Why They Leave the Air Force," in your March issue, does not tell the whole story. There has been too much left unsaid as to what the Air Force is supposed to be in the military defense set-up.

The Air Force, as I see it, is an entirely different military branch of the defense forces insofar as its personnel operations are concerned; the new look should consider the problem of regrouping the Air Force into three separate components: (1) a Combat Air Group; (2) a Combat Ground Force, similar to the Navy's Marines; (3) a non-combat technical ground force consisting of skilled and semi-skilled personnel to maintain and keep up the weapons and facilities of the base.

How much of the current griping over who should carry a gun, who should do sentry-go, and who should do KP would be eliminated by the above set-up is anyone's guess.

I also note your two housing pictures on page 34 and must agree that both types exist, even in this excellent housing area. Our Wherry project is much larger and more expensive than other privately owned rental quarters. Wherry is by no means a low-rent project as they take all the allowance plus a bite out of the base pay. The little shack you show would have a TV set and a $3,000 car parked alongside. The Air Force says they would not condone an airman housing his family in one of these shacks if they knew about it.

Thousands of new homes in the $7,000 to $12,000 class are being bought and paid for by the enlisted airman and the commissioned officer living side by side as neighbors. All this is possible by the increased quarters allowance. The airmen who live in cheap shacks are those who were never accustomed to anything better. Most of these misfits were among the 73,000 released from the Air Force.

I am still of the opinion there is too much Army in our seven-year-old Air Force and not enough brains.

Stephen J. Fraser, Sr.
Tampa, Fla.

**Off Base**

*Gentlemen:* In "Mobilization News," Februray issue, I find a reference to Reserve refresher courses is in error. For the sake of those Reservists who may be interested in taking these courses, I should appreciate it if you could bring a correction to their attention.

Specifically, the Aircraft Engine Mechanic course, AR43151, is conducted at Sheppard AFB, Tex., not at Lowry AFB, Colo.; the Armament Technician course, AR32022, is conducted at Lowry, not at Francis E. Warren AFB, Wyo.; and the Supply Technician course, AR-64034, is conducted at Francis E. Warren, not Sheppard.

Maj. Gerald A. Harty
Mitchel AFB, N. Y.

• *Sorry. We were caught off base.—The Editors.*

**Orientation for Wives**

*Gentlemen:* The Maxwell Officers' Wives' Club feels very deeply indebted to the staff of AIR FORCE Magazine for its efforts in providing us with such complete and interesting display charts of the organization of the Air Force for the Orientation Course for Air Force Wives. About nine hundred women attended each session of the Course, including the session at which the displays were used.

Mrs. Maude S. Williams, Pres.
The Officers' Wives' Club
Maxwell AFB, Ala.

**We've Checked**

*Gentlemen:* I was quite surprised to note, in the caption of the picture on page 28 of your March issue, that you refer to Gen. E. J. "Ted" Timberlake as another FEAF officer in Korea. You might check the record, and I believe he was either Commanding General or Deputy Commanding General of the Fifth Air Force at the time (1951) and has had a brilliant career in the Air Force.

I feel that with little effort you could have determined his identity and not refer to him as just "another FEAF officer." For shame!

Col. K. O. Dessert
Washington, D. C.

• *Actually, General Timberlake was Vice Commander of 5th AF at that time.—The Editors.*

# Preview of America's first jet transport

The model photographed above indicates how America's first jet transport will look in flight. The lower picture reveals the history-making airplane itself, now nearing completion in the Boeing Renton plant near Seattle, Washington. It will be ready for ground tests by midsummer, and is scheduled to fly this fall.

Boeing is building this prototype jet transport to demonstrate the valuable military and commercial service an airplane of its size, range and speed can perform.

A military tanker-transport, for instance, would complement America's swift jet bombers and fighters, accompanying them on long-range missions and refueling them aloft at their own choice of speed and altitude.

As a luxurious skyliner, the new Boeing will carry from 80 to 130 passengers, depending upon the seating arrangements chosen by the airlines. It is designed to fly non-stop from coast to coast, or from London to New York, yet serve efficiently over shorter routes as well.

This great new craft will travel the smooth upper air around 40,000 feet while maintaining a cabin pressure equal to 7,000 feet. It will be virtually free of vibration, and will cruise in the 550 m.p.h. range. It will be able to operate from existing airports.

Boeing is investing over $15,000,000 of its own funds in the project. This cost is Boeing's contribution toward the creation of an airplane essential for the security and the transportation progress of the nation.

Although of entirely new design, this pioneer jet has behind it the thousands of hours of research and flying that Boeing has put into the six-jet B-47 and eight-jet B-52 bombers. It is thus the product of the world's most extensive background of experience with large, multi-jet aircraft.

BOEING

# Shooting the Breeze

IN OUR February issue we published an AIR FORCE Magazine Staff Study called "Don't Count Your Missiles Before They Are Hatched." In it we were a little critical of the Army's Nike program for defense of our cities and took a dig at conventional anti-aircraft artillery. So we were more than a little pleased when Brig. Gen. Charles S. Harris, editor of the "Anti-Aircraft Journal," called and asked permission to reprint it in his magazine, the official journal of the United States Anti-Aircraft Association. In all fairness, we must point out that neither General Harris nor the Army went along with the fantastic claims for the Nike that brought forth our original study. That honor fell to another magazine, "U.S. News and World Report." The anti-aircraft people didn't agree with all we said but they thought well enough of it to get it to their readers. We are proud of the fact that the "Anti-Aircraft Journal" reprinted our article and we take our editorial hat off to General Harris for his open-mindedness and willingness to print both sides of a controversial matter.—END


**CREDITS**

Acting Art Director—Stuart I. Freeman; front cover artwork—Charles deM. Barnes; page 10—Arlo Greer; page 13 (Air Academy bill)—Wide World Photo; pages 33, 35, 54, and 57—Lanman Art Service; pages 72, 75 (College Park and Wiesbaden), and 76 (Libya)—photos by Danegger, University of Maryland.



# AIR FORCE

THE MAGAZINE OF AMERICAN AIRPOWER

Vol. 37, No. 5 • MAY 1954


## FEATURES


HOW TO LIVE WITH THE H-BOMB.....by T. F. Walkowicz and John F. Loosbrock 16

HAS THE H-BOMB ABOLISHED TOTAL WAR?.....by Sir John C. Slessor 23

GENERAL HOYT S. VANDENBERG..... 27

EVERY SPRING, JUST LIKE THE DANDELIONS.....by Edmund F. Hogan 33

RED SHADOWS OVER THE RISING SUN.....by Earl H. Voss 34

NATO BRAIN BANK.....by Dr. Theodore von Karman 60

LARGEST CAMPUS IN THE WORLD.....by Lawrence P. Bachmann 72


## DEPARTMENTS


Air Mail ..... 4

Wing Tips ..... 10

Airpower in the News..... 13

Rendezvous ..... 43

Jet Blasts ..... 44

The Ready Room..... 53

Tech Talk ..... 58

AFA News ..... 67

## THE COVER

The awesome cloud from the first hydrogen bomb explosion coupled with the B-52s of the Strategic Air Command are symbolic of the great shield of US air-atomic power, prime architect of which was Gen. Hoyt S. Vandenberg. We thought it fitting, in this cover commemorating his death, to take the opportunity to pay tribute to General Vandenberg for his foresight, honesty, courage, and tenacity without which this prime deterrent to World War III would not exist. See a further tribute to the former Chief of Staff beginning on page 27.


## AIR FORCE STAFF

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By Wilfred Owen

*The Civil Aeronautics Administration operates nearly 175,000 miles of leased wires linking together the federal airways system.*

* * *

Here are the 1953 plane travel totals for Washington's most air-traveled government officials: 115,000 miles for AF Secretary Talbott; 78,000 miles for Foreign Operations Director Stassen; 64,000 miles for Secretary of State Dulles; 58,000 miles for Vice President Nixon; and 48,000 miles for Secretary of Defense Wilson.

* * *

**DC-7s, Super Connies, and Stratocruisers cost about $2 million apiece.**

* * *

*Today's airborne prospectors strike oil and gas while flying 200 to 300 feet off the ground. Deposits are located by an instrument that measures the radioactive elements in the rocks and shale. The radioactivity cannot penetrate the oil and gas, so a low count locates the treasure.*

* * *

Dinner on an airliner goes a long way—about 280 miles on the average. You take twenty-five miles to eat the appetizer, 110 miles for the entree, forty miles for the salad, thirty-five miles for dessert, and seventy miles for coffee and a cigarette.

* * *

*Last year the domestic airlines carried a billion and a half letters.*

* * *

**In New England apple orchards and in the pear orchards of California, the helicopter is helping to keep the fruit from falling to the ground before the pickers can get to it.**

**Copter pilots do it by dusting the trees with hormones to strengthen the stems just before the harvest.**

* * *

*Seaplane hulls sixty feet long and twelve feet high are being hauled on trucks 984 miles from Evansville, Ind., to the Grumman factory on Long Island.*

* * *

The Swiss city of Basle and the French city of Malhouse, twenty miles apart, have found a way to get by with one airport between them. The airport site, on French ground, has been internationalized, and there is a three-mile internationalized highway providing access into Switzerland.

* * *

**Airplanes have done such a thorough job spraying the spruce budworm in the Northwest that the Forest Service may find it unnecessary to spray at all next year.**

* * *

A New York taxicab driver collided with a four-engine aircraft when he took the wrong turn off a highway at LaGuardia Field. Police charged him with disobeying signs.

S·A·S flight crews can cross the Atlantic or criss-cross Europe with new electronic

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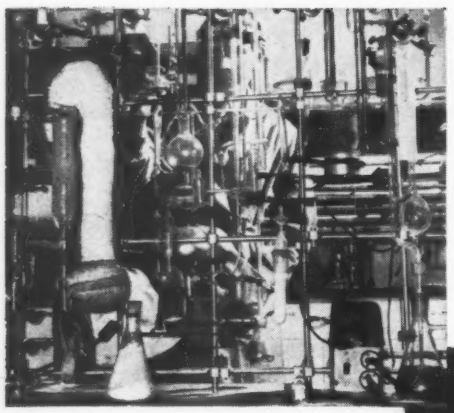

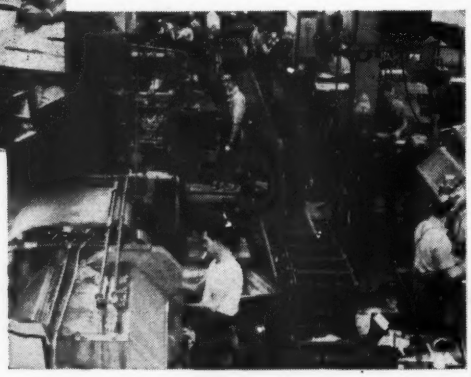

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THE GENERAL TIRE

# AIR POWER IN THE NEWS

**President Eisenhower, right, shakes hands with Sen. Homer Capehart after signing the Air Academy bill. In center are AF Sec'y Talbot and Gen. Twining.**

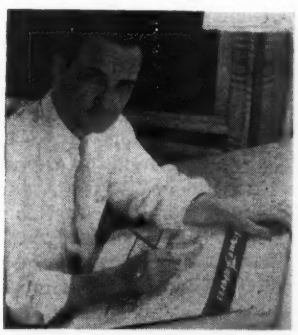
The **Air Force Academy** moved a step closer to reality last month when President Eisenhower, above, signed the bill authorizing the school. A site has yet to be picked. For that a **five-man commission** is now touring the nation to survey proposed locations. The board includes Lt. Gen. Hubert R. Harmon, special assistant to the AF Chief of Staff for the Air Academy; Virgil M. Hancher, president of the University of Iowa; Charles A. Lindbergh, whose promotion to brigadier general in the Air Force Reserve was recently approved; Merrill C. Meigs, a Hearst publishing executive; and retired Gen. Carl A. Spaatz, first Air Force Chief of Staff and an Air Force Association Board Member. The Air Force plans to start the first Academy class in July 1955, in temporary quarters at an AF base if the school itself is not built by then. The **first class** will be limited to 300. Each Senator and Congressman is permitted to nominate ten men. From these, the Air Force will pick, by examination, 255 for the first class. The other forty-five will come from the District of Columbia, Alaska, Puerto Rico, Hawaii, and from enlisted men on active duty, Reserve enlisted personnel, and the sons of deceased veterans.

A broader, more **cultural education** than given at Annapolis or West Point is in prospect for graduates of the Air Academy. The approved curriculum, which has been in preparation for five years, gives more stress to liberal arts and less to technical training than either the Army's or Navy's. The Air Academy, for example, plans to devote 324 hours to the study of English and self-expression, as against 180 hours of West Point and 188 at Annapolis. But the technical side won't be glossed over, for all graduates of the Air Academy will receive bachelor of science degrees, and many of them will have studied aircraft designing, taking such courses as mathematics, chemistry, physics, mechanical drawing, electrical engineering, aerodynamics, jet propulsion, and mody-namics. Others, those with an aptitude for languages, in their senior year will learn a foreign language, with fluency stressed rather than grammar. The Academy's broad curriculum also includes courses in geography, philosophy, government, economics, psychology, and international relations.

Since the Air Force was formerly part of the Army, and since many present Air Force officers are graduates of West Point, the Army school will serve in many ways as a model for the new Air Academy. An **honor system** similar to West Point's will be adopted, and leadership courses and physical training programs will be patterned after those at West Point. So will the teaching staff and the indoctrination of first-year students. But the Air cadets are expected to be less confined than cadets at the other service academies and, unlike cadets at West Point or Annapolis, will probably be able to leave the school on weekends. The **cadet uniforms**, as now planned, will be identical to those worn by Air Force officers and airmen, though with distinctive markings. Dress uniforms are under consideration.

Within weeks after the signing of the bill to grant the Air Force its own service academy, the AF announced the start of an unprecedented **recruiting drive** for 200,000 volunteers. **Brig. Gen. Arno H. Luehman,** deputy Chief of AF information, was picked to head the program. A few days earlier AF Secretary Harold Talbott had told the American Society of Newspaper Editors that Air Force reenlistments had fallen fifty percent. He blamed the lopping off of fringe benefits as one reason for **discontent in AF ranks.** General Luehman, pointing out the need for recruiting an average 15,000 men a month, beginning in July, said, "It would cost the Air Force $2 billion additional if we had to turn to the draft." To try to replace the large number of airmen who signed up for four-year hitches during Korea and who are not reenlisting, Luehman will set up headquarters at **Wright-Patterson AFB, Ohio.** From there his staff of 150 will still use the present joint recruiting and processing facilities but will control all Air Force recruiters and spend a proposed $1,200,000 on advertising.

In August 1948, a Washington, D.C. commercial artist, **William A. Dean,** took a new job—Art Director of AIR FORCE Magazine. Dean, a World War II veteran of three years as an Air Force printing control officer, was well suited for the job. The first issue he designed —September 1948—showed that. And so did subsequent issues, through the years, as the magazine grew in size, stature, and, many said, attractiveness. During these years Bill Dean kept the art studio he'd maintained since ten years before the war. He also remained active in the Air Force Reserve, rising to the rank of major. But the March 1954 issue of AIR FORCE was Bill Dean's last. As the issue went to press, he was stricken with a cerebral hemorrhage, and on March 18 died in a Washington hospital. He was 45 years old. Burial with military honors was in Arlington National Cemetery. A testimony to Bill Dean's life were the sixty-six issues of AIR FORCE he could properly call his.



**Dean.**

Like retiring Deputy Secretary of Defense Roger M. Kyes, who had agreed

*(Continued on following page)*

White

Craigie

Power

Putt

to stay on in his Pentagon post for only a year (see AIR FORCE, April 1954), two other Defense figures now plan to return to their former positions. One is **H. Lee White,** Assistant Secretary of the Air Force for Management, who wants to resume his New York law practice before July 1. The other is **Dr. John A. Hannah,** Assistant Secretary of Defense for Manpower, who in addition to his Pentagon job is also president of Michigan State College. He plans to return to the college presidency for the fall term. White, who has been mentioned as a possible successor to Dr. Hannah in the Pentagon, was a Navy officer in charge of manpower and personnel for the Secretary of the Navy during World War II. During his service with the Air Force, he supervised personnel programs and policies and was the AF representative on the Personnel and Manpower Council and the Reserve Forces Policy Board, both Defense agencies.

STAFF CHANGES . . . **Lt. Gen. Laurence C. Craigie** left his job April 15 as Deputy Chief of Staff, Development, to become commander of Allied Air Forces in Southern Europe. There he replaces **Lt. Gen. David M. Schlatter,** who becomes commandant of the Armed Forces Staff College. In that post General Schlatter succeeds Army Lt. Gen. A. D. Bruce. General Craigie's replacement as DCS, Development, is **Lt. Gen. Donald L. Putt,** who until April 15 headed the Air Research and Development Command (see AIR FORCE, April 1954). **Maj. Gen. Thomas S. Power,** formerly vice commander of SAC, gets a third star and General Putt's old job at ARDC.

The new commander of the Fifth Air Force, in the Far East, is **Maj. Gen. Roger M. Ramey,** slated to take over from **Lt. Gen. Samuel E. Anderson** on June 1. General Ramey has also been nominated for three-star rank. General Anderson's new post was undecided at presstime. General Ramey's replacement as Director of Operations was scheduled to be **Maj. Gen. Wiley D. Ganey.**

On May 1, Assistant Deputy Chief of Staff, Personnel, **Maj. Gen. Emery S. Wetzel,** vacates his Pentagon post to take over the Atlantic Division of the Military Air Transport Service, Westover AFB, Mass., filling the position left open by the retirement in February of **Maj. Gen. Robert K. Taylor.** General Wetzel's replacement as the number two man in DCS, Personnel, under Lt. Gen. Emmett O'Donnell, will be **Maj. Gen. John S. Mills.** General Mill's new assignment begins June 14. He has been commander of the Air Force's Special Weapons Center, Kirtland AFB, N.M., an ARDC installation.

In other staff changes, Assistant Deputy Chief of Staff, Development, **Maj. Gen. James E. Briggs,** was replaced April 15 by **Maj. Gen. Herbert B. Thatcher.** General Thatcher has been acting Director of Plans, a slot that **Maj. Gen. Richard C. Lindsay** took over on April 1. Also on April 15, General Briggs took over from **Maj. Gen. Truman H. Landon** as Deputy Chief of Staff, Operations. The Air Force's Auditor General, **Maj. Gen. Thomas R. Rampy,** was replaced April 1 by **Maj. Gen. Kenneth E. Webber.** The new commander of the Third Air Force is **Maj. Gen. Roscoe C. Wilson,** taking over from **Maj. Gen. Francis H. Griswold.** And the Office of Director of Installations, under DCS, Operations, has been eliminated as of April 1. **Maj. Gen. Lee B. Washbourne** heads a new office as Assistant Chief of Staff, Installations.

**John Paul Jones the sixth,** a direct descendant of the famed naval hero of the American Revolution ("I have not yet begun to fight!"), has joined the Air Force after completing a four-year hitch in the Navy. His logical explanation—"Airplanes can go anywhere. Ships can't."

Forty-two selected target areas in the nation, Honolulu, and San Juan, Puerto Rico, will get a mock atomic plastering **June 14 and 15** in a nationwide **civil defense "training exercise."** All forty-eight states, Hawaii, Alaska, Puerto Rico, and ten Canadian provinces will take part in "Operation Alert," say Federal Civil Defense authorities. The exercise is primarily for training civil defense personnel, and any public participation will be at the discretion of state civil defense directors.

Three Navy's jet fighter pilots, refueling in flight, have pushed their Grumman F9F Cougars across country in record time to shatter (unofficially) Air National Guard **Col. Willard W. Millikan's** January 2 speed mark of four hours, eight minutes, and five seconds, which still stands on the official books. Best time for the Navy jockey was **Lt. Cmdr. Francis X. Brady's** three hours, forty-five minutes, and thirty seconds for the 2,438 miles between San Diego, Calif., and New York. Just one minute and nineteen seconds behind him was **Lt. (j.g.) John C. Barrow,** who was a scant two minutes ahead of the third Navy flyer, **Lt. (j.g.) Wallace Rich.** The Cougars were refueled over Hutchinson, Kan., by a flying tanker plane that pumped some 750 gallons of fuel to each fighter. Colonel Millikan had had to land his F-86 Sabrejet at Offutt AFB, Neb., for fueling en route (AIR FORCE, February '54). Another stab at Millikan's record had been made earlier by speed pilot **Joe DeBona** who took advantage of the jet stream to fly from Los Angeles to New York in four hours, twenty-four minutes, and seventeen seconds in a North American P-51 Mustang, owned by screen actor Jimmy Stewart. DeBona's time failed to meet Millikan's but did set a new transcontinental record for a piston-driven plane.

"Red Star," the Russian armed forces newspaper, now claims credit for **inventing the jet engine.** "The Soviet Union," said the newspaper, "is the home of jet aviation. Soviet scientists were the first in the world to work out the theoretical fundamentals for the construction and exploitation of jet planes." The editors of "Red Star" would get an argument from Great Britain's **Sir Frank Whittle,** who took out his first patent on a jet in 1930 and on his first experimental jet-powered plane in 1951. (For more on the early history of jets, see Dr. Theodore von Karman's article, page 60 of this issue.) —END

# MORE LEAR AUTOPILOTS WERE PRODUCED IN 1953 THAN ALL OTHER MAKES COMBINED!

CP-3

*Man's survival may depend on our not succumbing to fatalism*

# HOW TO LIVE with THE H-BOMB

**By T. F. Walkowicz and John F. Loosbrock**

BY THIS time the millions of words and tons of newsprint that have been expended in writing about the hydrogen bomb would probably fill the fourteen Pentagons which, so it is said, could be placed in that well-publicized crater at Eniwetok Atoll. Out of all this discussion some points have become painfully clear:

We have known, ever since last August, that the Soviet Union, as well as ourselves, possess a terrible weapon; and further, that the USSR probably started its development some months before we did.

We also know that we have the delivery capability, given a "device" engineered into a transportable bomb, to pulverize Soviet targets with it.

We know that the Russians have a like capability in relation, not only to this nation, but also to the majority of our allies in the Free World.

We know that our highly concentrated industrial complexes have crowded one out of every three Americans into lucrative target areas for weapons of mass destruction.

We know, conversely, that only one out of every twelve Russians lives in cities of half a million or more. We know that, if we continue to believe and live by the moral standards which form the foundation of our kind of government, we cannot strike the first blow.

We know that Soviet Russia is bound by no such compunctions, that she can strike whenever she thinks it will serve her announced purpose of world domination.

We also know that, unlike the A-bomb which could be carried in suitcases, lobbed from submarines, or dropped from carrier-based aircraft, the H-bomb, at least for a comparatively short time, is so large and so heavy that it can be delivered only by relatively large aircraft.

In such a frame of reference discussions as to whether or not our hydrogen bomb tests should continue, whether the H-bomb can lay waste 150 square miles or merely 100, whether it would kill millions of people or perhaps only hundreds of thousands, would seem to verge on the academic. The plain truth is that the H-bomb era is here, and that we have had more warning but little more preparation, physically and psychologically, than for its immediate ancestor, the A-bomb. The H-bomb cannot be stopped, it cannot be explained away, ignored, tossed around like any other political football, or editorialized out of existence. How to live with it, or in spite of it, is the question of the day.

In such a situation it is a temptation to succumb to pessimism and fatalism, to assume that the worst must come sooner or later, to see the world as two gigantic armed camps, piling megaton on megaton in a thermonuclear arms race that can only result in megadeath on megadeath. If this is inevitably true then all of us are wasting our time and we need only hold out our wrists submissively to the MVD saying, in effect, "Don't shoot, officer. We'll go quietly."

Fortunately, alternatives exist. And, if these are pursued firmly and courageously, the world may not only be spared the horrors of nuclear holocaust but conceivably may achieve lasting peace with honor, even in our time.

First of all, to find honorable peace the Free World must survive, and survival in this time of total peril means taking positive action. A man cannot exist indefinitely with a loaded pistol pointed at his head, consoled only by the fact that he can blow the other fellow's brains out at the same time the bullet is crashing through his own skull. The deadlock must be broken, if only to give us time and space to maneuver in the diplomatic field. The so-called "US-Soviet nuclear symmetry" must be thrown into imbalance. We must devise additional deterrents, beyond the vital—but of itself insufficient—capability of immediate and massive retaliation. By doing so we can buy time—perhaps as much as ten years—in which to abolish aggressive war as an instrument of national policy.

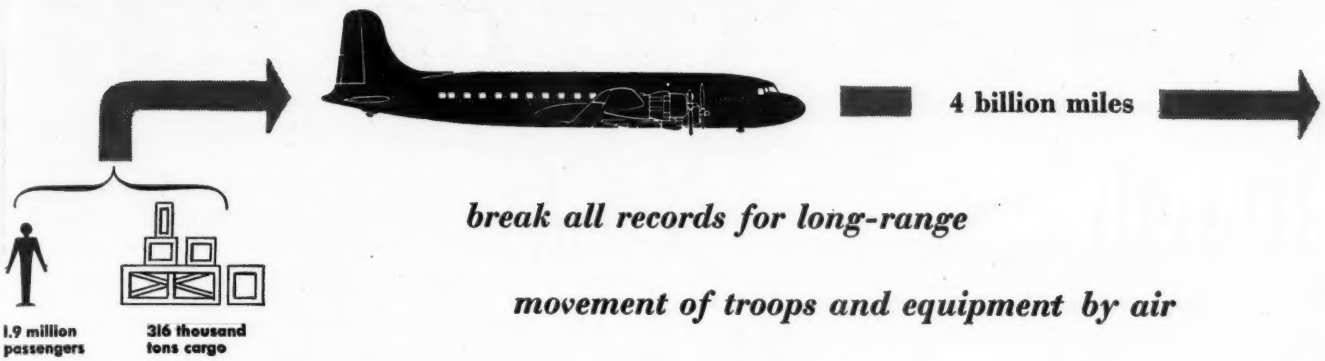
1. Our retaliatory arm, the Strategic Air Command, can and must be continually strengthened. Its vulnerability could be reduced by dispersal of bases and by underground bomb-proof storage for fuel, bombs, spare parts, and other war consumables—and perhaps even planes. SAC's delivery capability must continually be kept ahead of that of the enemy's—through development of supersonic bombers, nuclear-powered aircraft, and (eventually) through the virtually unstoppable intercontinental ballistic missile. This is, essentially, an ante-raising proposition in which we must drive the price of an easy victory beyond the enemy's means and/or desires.

2. Simultaneously we should take maximum advantage of the flexibility of effort now allowed us by the wide variety of nuclear weapons in our stockpile and add the new force of tactical atomic airpower to the formidable and growing bomber force of SAC. Fighters carrying so-called "baby" A-bombs against purely military targets might well be the answer to the problem of deterring, confining, and winning "local" wars. (This possibility to date has escaped adequate attention. See p. 23. The proposed revision of the Atomic Energy Act would greatly help this situation.) And fighters armed with tactical nuclear weapons could also hit targets deep within the Soviet Union itself, thus becoming a sort of "Junior SAC" based on our allies' own soil—convincing evidence that we intend to help defend them. Thus, the USSR cannot win an easy victory by knocking out our SAC alone—she must also destroy all of our tactical airpower if the USSR is to escape devastating retaliation. This tactical atomic airpower is becoming of great significance.

3. Hand-in-hand with enhancing our retaliatory capability, we must make attack on the Free World as costly as possible for the attacking force. We must bend every effort to make our air defense as leakproof as it can possibly be—still another way of raising the ante. Unconventional means, such as nuclear warheads for defending inter-

*(Continued on page 19)*

*Helps Military Air Transport Service*

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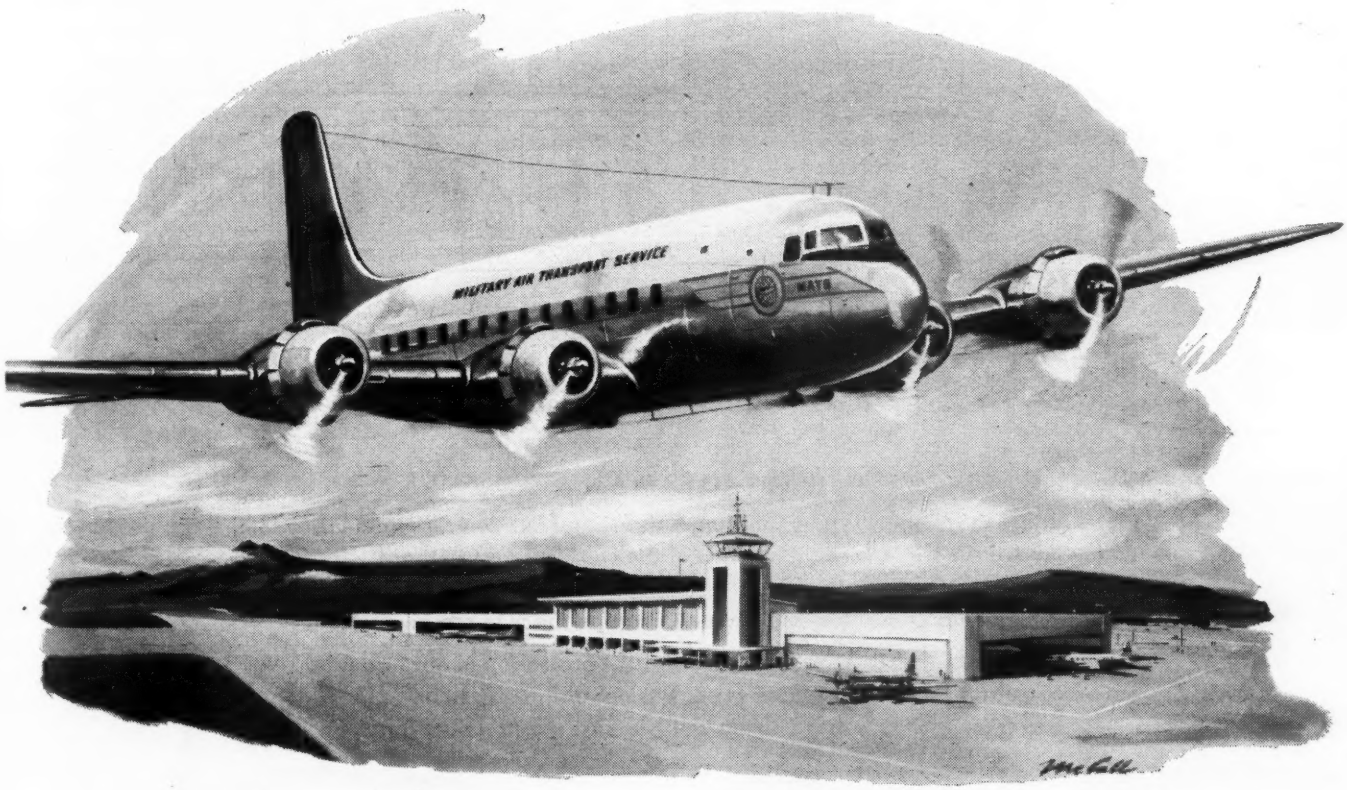
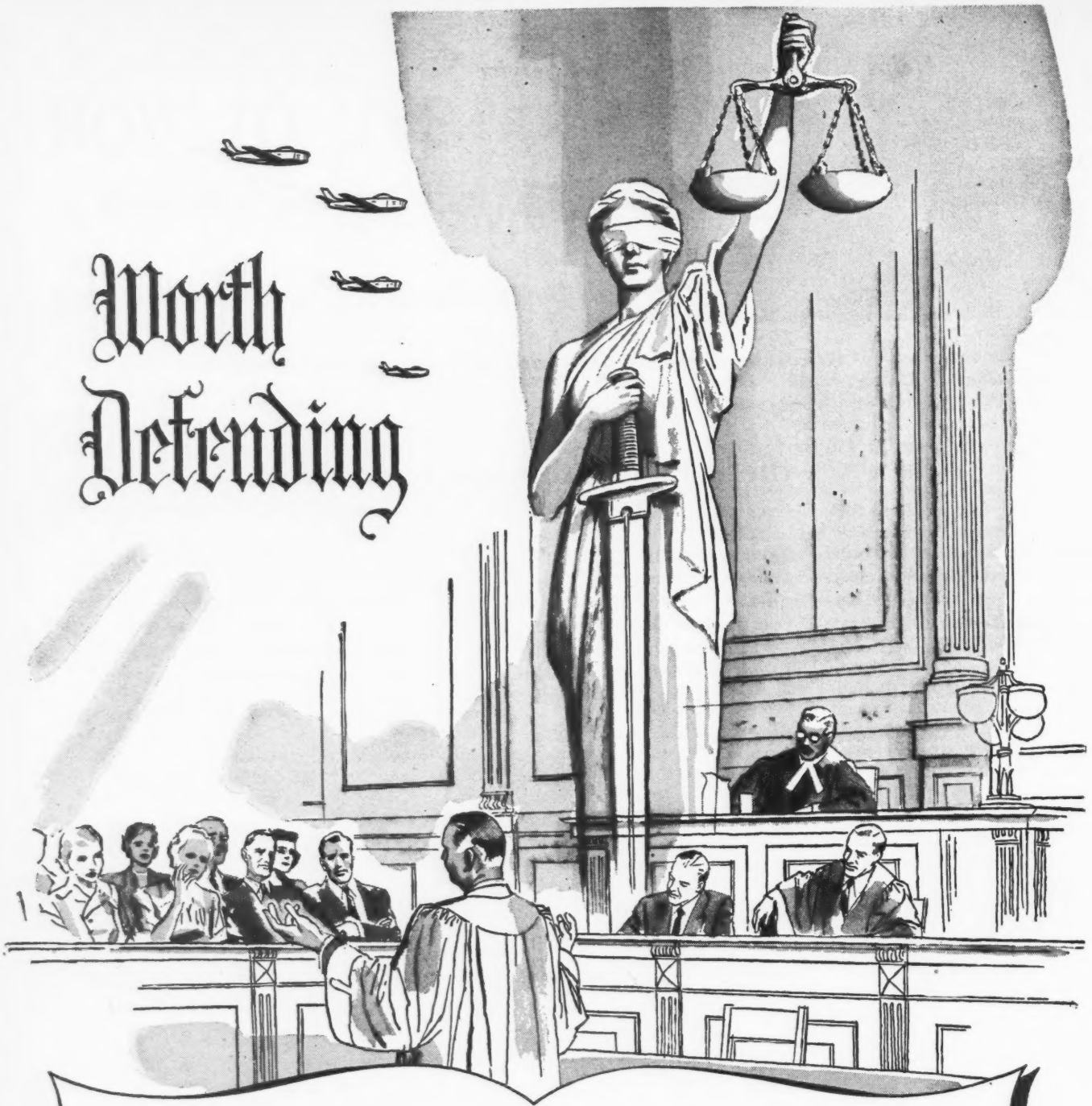
Liftmaster's performance, at low cost per ton-mile, shows Douglas Aviation leadership. *Faster and farther with a greater payload* is always the basic rule of Douglas design.




*Enlist to fly with the U.S. Air Force*

**Depend on *DOUGLAS*** **First in Aviation**

# Worth Defending



## THE RIGHTS OF MAN

Courts of law should be a symbol of human rights and freedom; a symbol that has been made and still is a travesty in many parts of the world. Arrest without warrant... false confessions through psychological or physical torture... sentence without charge... all have come close to universal triumph *twice* in our generation.

In our way of life, a fair trial before jury and the protection of our individual rights are among our most precious possessions. It is our obligation to be ever on guard... for the Rights of Man are *worth defending!*

CA54-8UST

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ceptors, rockets and missiles (AIR FORCE, July 1952) and last-ditch measures like ramming (AIR FORCE, October 1952) should not be ignored. We must insure that each year that passes means a smaller number of nuclear bombs would reach American targets in case of Soviet attack, instead of the reverse, as presently seems likely.

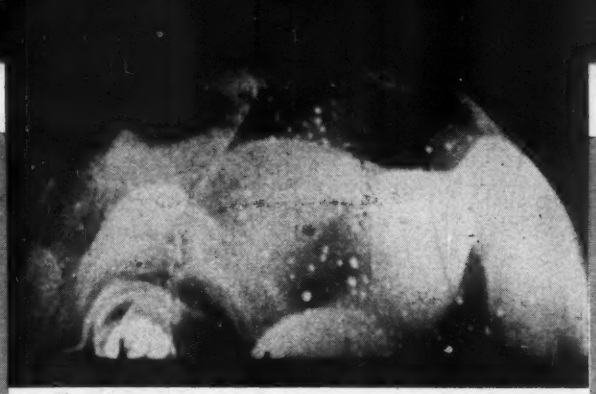
4. One hand washes the other in the race for survival, and an adequate air defense system would pay added dividends in terms of American lives. A real early warning system that would give us, not fifteen minutes' or even two hours' but a minimum of six hours' warning, would make possible the only satisfactory kind of civil defense against the hydrogen bomb—mass evacuation of our cities. For to the initial blast of the H-bomb and the uncontrollable fires which would follow it, planned, orderly, drilled evacuation is the only sensible answer. So our civil defense exercises should be realistic. We must learn to empty our teeming urban areas in a matter of hours, enforcing cooperation, if eventually necessary, with stiff fines and perhaps even jail sentences. Bitter medicine, but preferable to death by evaporation. Along with evacuation should go the stockpiling, in suburban and nearby rural areas, of medical supplies and emergency rations to insure the survival of our most precious national asset—our people.

5. It is, in the minds of many, wishful thinking to talk of dispersing the factories and populations of existing urban complexes. But there is no compelling reason why new construction—of industry, of government, and of residential housing—could not follow the dispersal pattern. Legislation to encourage dispersal, based on reliable technical information on bomb damage and including adequate tax incentives, should find a foremost spot on the docket.

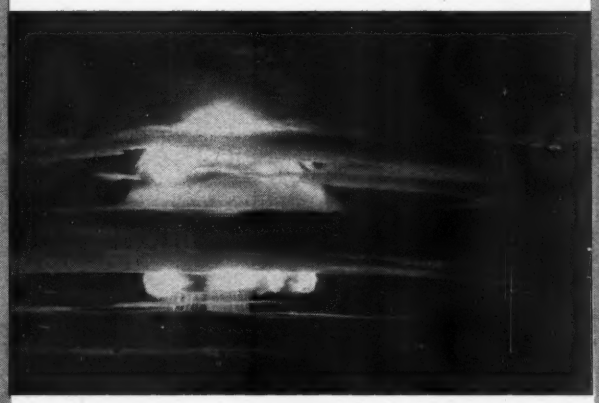
6. One other place in which we can raise the ante is the field of Intelligence. Actually intelligence should be the first step of early warning, measured in days rather than in hours or minutes. We have a tendency to assume that the ability to strike the first blow necessarily gives the Soviets the overwhelming advantage of surprise. As a result we find we need greater military forces-in-being to offset this advantage. But should we let the situation go by default without fully exploring the possibility that the Free World's scientific genius can devise a warning system that would give us days in which to prepare for the blows? Even further, why not a warning and alert system that would put SAC's bombers over Soviet targets hours—or minutes—after the first Red bomb has fallen?

To get this kind of security will be costly—in terms of money, scientific manpower, time, and strategic materials—for an indefinite period of time. Certainly the situation seems serious enough to be studied objectively by the kind of non-partisan civilian commission that the Air Force Association proposed in its Statement of Policy of last August (AIR FORCE, October 1953). The very least we, as a nation, can do is to explore seriously and thoughtfully any feasible way of staving off nuclear conflict.

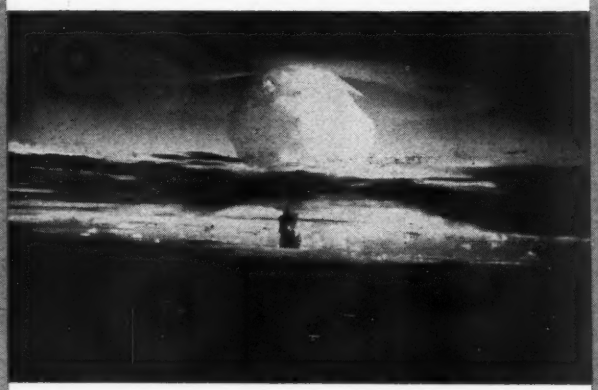
Against the possible cost of such a program we must balance the huge investment we have already made in our defenses. We have anted several times and we are putting up more money every day at very high rates indeed. And the best poker player in the world cannot bluff indefinitely. Not when the winning hand takes the entire pot. Close, as the saying goes, only counts in horseshoes. If we cannot lead from military strength in our diplomatic efforts we are doomed to failure from the start. And neither Republicans nor Democrats will remain to place the blame or to share in it. Rather we will *all* wind up beating our swords, not into plowshares, but into shovels with which to bury our dead.—END



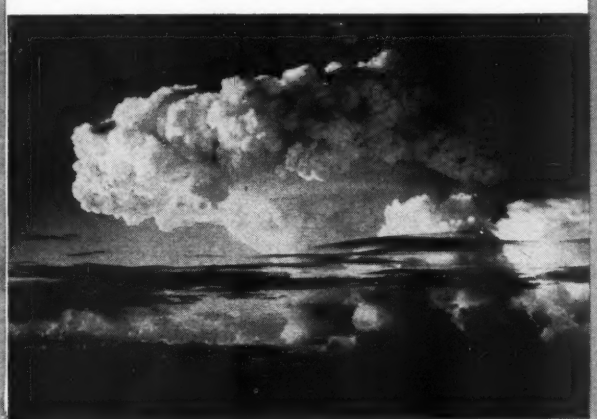
**They called the device "Mike." This fireball it produced was about 3¼ miles in diameter.**



**This photo was taken 50 miles from detonation site at the moment fireball hit 12,000 feet.**



**Two minutes after the big bang, the cloud rose to 40,000 feet, 32 Empire State Buildings high. Meantime, the Pacific test island disappeared.**



**The mushroom portion of the cloud stem went straight up around ten miles and spread a terrifying radioactive blanket for 100 miles.**

# INVISIBLE JET FIGHTER MAKES TEST FLIGHT

This Grumman jet fighter is invisible. She is electrons. Yet day after day, she makes supersonic flights through an electronic sky.

Actually she is an electronic brain by name of REAC (Reeves Electronic Analog Computer) directed by a group of brilliant human brains. The latter convert the mathematics of the aircraft into a language they and she understand. They "tell" her everything they know about the new fighter design through wired panels and curves wired on revolving drums.

The cockpit with its human pilot is plugged in. At a signal he takes off and climbs to fifty thousand feet. The electronic air is smooth up to the transonic range where sound waves pile up until the air misbehaves. Once through, the air is smooth again, and they are ready to test a combat maneuver at supersonic speed.

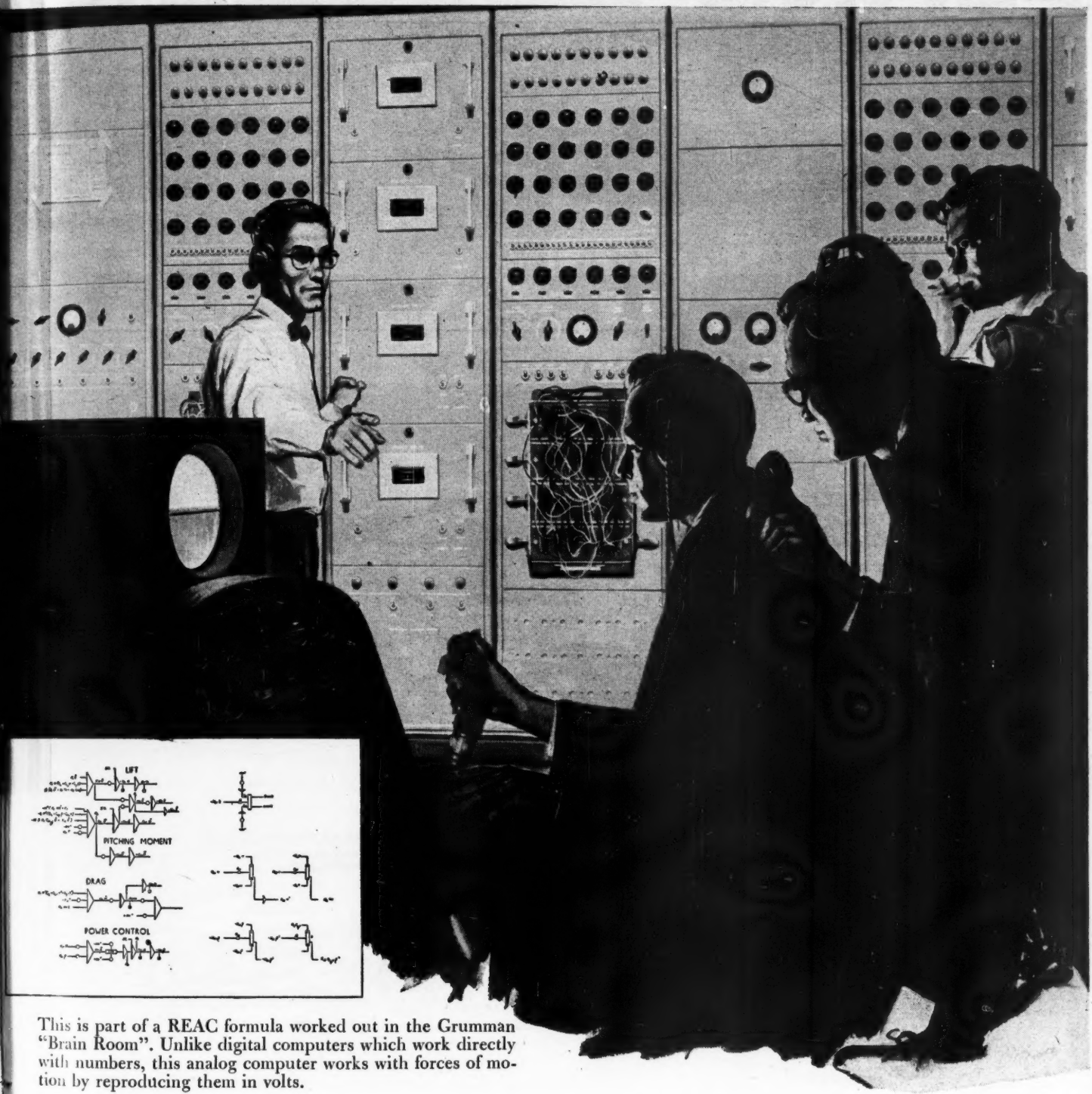
"Now decelerate."

The pilot extends speed brakes. All eyes watch the instruments, and the reactions recorded on moving graph paper.

These performance data, gained months before actual flight tests, help check designs created with results from other Grumman research. One reason Grumman planes are ready in quantity when needed.

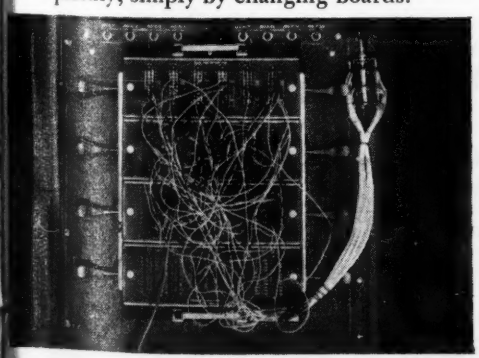
**GRUMMAN AIRCRAFT ENGINEERING CORPORATION • BETHPAGE • LONG ISLAND • NEW YORK**

*Designers and builders of the Cougar jet fighter, the S2F-1 sub-killer the Albatross amphibian, metal boats, and Aerobilt truck bodies.*

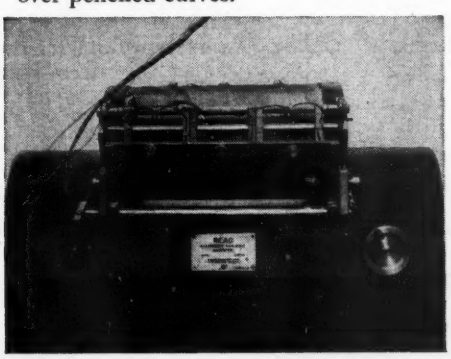



This is part of a REAC formula worked out in the Grumman "Brain Room". Unlike digital computers which work directly with numbers, this analog computer works with forces of motion by reproducing them in volts.

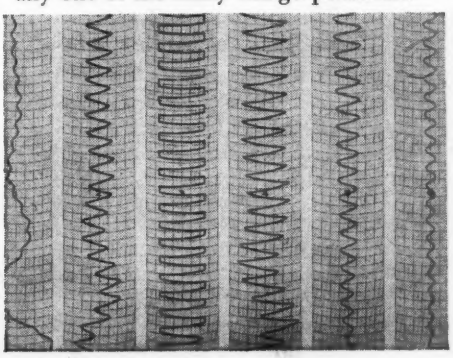
The computer is "told" the facts of the problem through miniature switchboards. A different problem can be made known to the computer quickly, simply by changing boards.



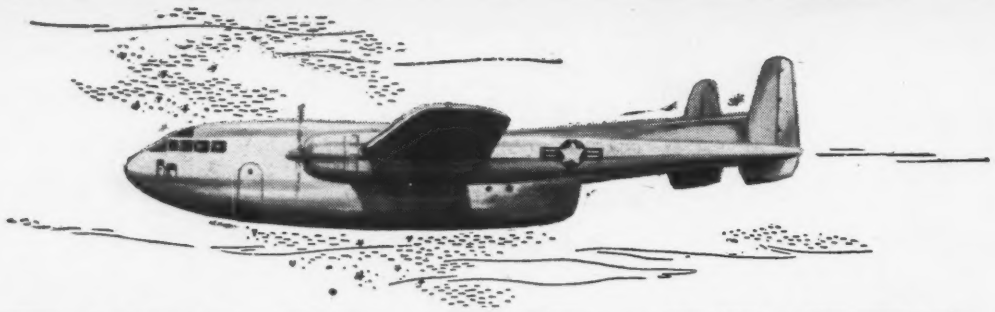
Some data, like wind tunnel results, are fed into the computer from revolving drums. The computer gets its information electrically from copper wires glued over penciled curves.



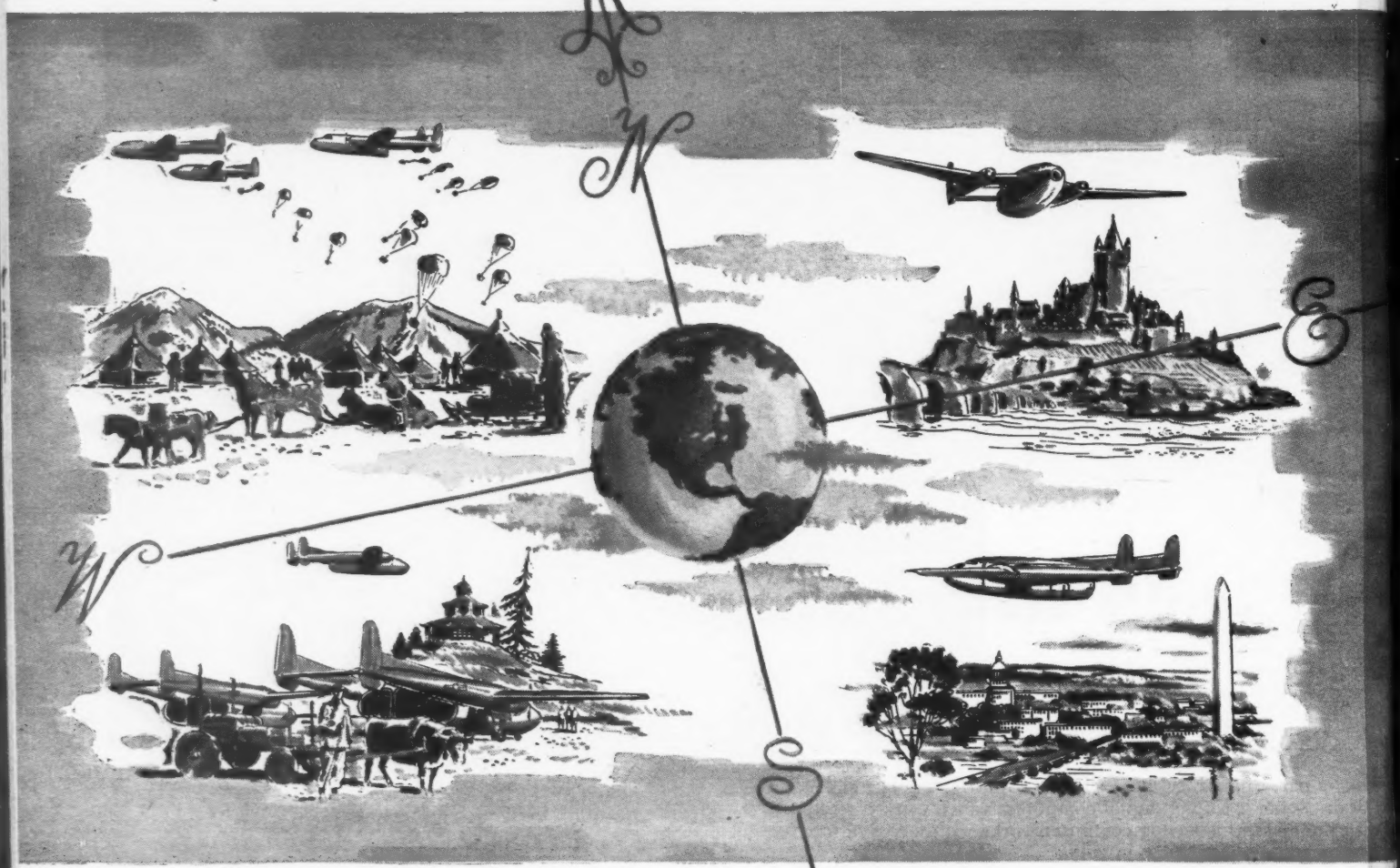
These are typical REAC answers. Engineers translate these squiggles into design information. Sometimes thousands of such answers may be required to solve any one of the many design problems.



# FLYING BOXCAR...



# WORLD TRAVELER



From the frozen regions of Alaska and Northern Canada to tropical lands in Africa and Asia, Fairchild combat-proven C-119's are daily delivering varied cargoes through intense heat, sub-zero temperatures, tropical humidity and arid desert air. Famous "Flying Boxcars" carry on . . . proved against the severest conditions of landing, take-off and flight.

The work horse of our Military Services, the "Flying Boxcar" is built for its versatile job . . . to pick up and deliver bulk military cargo and deliver it *anywhere* at an exceptionally low cost per ton-mile. There is only one "Flying Boxcar". That is why its unique twin boom configuration is a familiar sight in every quarter of the free world.

**Now in production, the C-123 assault military carrier**

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AIR FORCE
MAY 1954

# Has the H-Bomb Abolished TOTAL WAR?

***Perhaps, but there are no panaceas, no short cuts, no black magic in the great deterrent of air-atomic power***

**By Sir John C. Slessor**

MARSHAL OF THE ROYAL AIR FORCE (RETIRED)

## EDITORS' NOTE

This article by the former Chief of the Air Staff of the Royal Air Force is the outgrowth of two talks that Marshal of the RAF Slessor made over the facilities of the British Broadcasting Company early this year. His views on what he called "the complete revolution in human affairs brought about by the coming of age of airpower" were so cogently presented that we thought it would be a service to our readers to ask him to expend on them in an article written exclusively for AIR FORCE Magazine. We cannot say that we subscribe to all of his ideas in their entirety, but we do feel that discussions of this nature are a worthy addition to the great debate over the so-called "New Look." Only in such a framework of debate, we further feel, can sound and wise policy decisions be formulated. As Sir John said, in the first of his BBC broadcasts:

"For the first time in the hundreds of thousands or millions of years that man has existed he can carry or propel through the air for thousands of miles, at a speed somewhere about that of sound (and ultimately much faster), a missile that by itself can destroy a city. It is silly to behave as though this revolution had never happened. Actually it has completely transformed the whole complexion and dimension of the problem of peace and war."

It is hard to quarrel with this thesis. But it is when you begin to discuss ways and means of coping with the situation that tempers rise and concepts clash. With Sir John's main point—that air-atomic power has abolished total war—you may find it difficult to agree. But we think it is well worth discussing, and we hope to God that it proves to be true.—

THE EDITORS.

# Has the H-Bomb Abolished

**1. Massive retaliatory power is the great deterrent under cover of which the other two branches of our basic policy must be pursued. These are:**

**2. The ability to deal in a limited way with limited emergencies wherever and whenever they may arise**

**3. The political front—that vast field of foreign relations and economic policy, of ideologies and the clash of ideas, where the real World War III is now being fought**

THE RECENT development in British and United States defense policy which has been described as the "New Look" amounts to no more than a formal recognition of new strategic facts of life and a rationalization of tendencies, originating mainly in economic conditions, which it has been increasingly obvious would have to be faced sooner or later. It accepts the truth that the world has arrived at a crossroads of history—a revolution in the whole concept of war—when it is neither feasible nor economically practicable to continue to superimpose the new strategy of an atomic age upon a modernized version of the Kaiser's war—a vast war of lines in Western Europe.

There has, however, been some muddled thinking about it—a tendency to jump at panaceas, and an unjustified hope that it will result in great financial savings. There are no panaceas, no short cuts to victory in the new cold war any more than in the old hot variety. Atomic airpower cannot do everything. Its massive achievement is that it has abolished total war, the nightmare of all simple people on both sides of the Iron Curtain. It has not abolished *all* war, nor obviated the necessity for maintaining conventional forces on land or at sea. It has provided a preventative to *total war* and given the Free World a security against the sort of attack that has nearly ruined it twice in the last forty years, which was otherwise unattainable except at quite prohibitive cost. But, though major economies in defense expenditures are still possible, they must be sought where they could have been found anyway, New Look or no New Look.

Strategic policy is a vastly intricate business—a whole complex of interdependent and intertwining interests and pressures, political, economic, social and religious, as well as what we are accustomed to think of as purely military—and we only confuse the issue by trying to oversimplify it. So the New Look is not just a single conception based on the supremacy of atomic airpower, although that is the mainspring of it on the purely military side.

It has three main branches. First, the "massive retaliatory power" as Mr. Dulles has called it, the great deterrent under cover of which the other two branches of the policy must be pursued, and the instrument which would be decisive if for some unlikely reason the deterrent were to fail. Secondly, the ability to deal in a limited way with what will, or should, be limited emergencies, without having to resort to the dread arbitrament of atomic airpower; and that involves the need to maintain forces of the appropriate kind, and the willingness to use them where necessary. And finally, the political front—that vast field of foreign relations and economic policy, of ideologies and human relationships and the clash of ideas, where the real World War III is now being fought.

Take first the great deterrent. The dominant reality of our day is that the introduction of this weapon of mass destruction, the atomic and now the hydrogen bomb, into the armories of the world has profoundly altered the

# TOTAL WAR ?

By Sir John C. Slessor

whole complexion and dimension of the phenomenon that we have hitherto known as war. We delude ourselves if we imagine that this weapon is merely a bigger and better bomb, different only in degree but not in character from the blockbuster of 1939-45, or that there is any analogy with gas, which both sides possessed but neither used last time.

There is not the smallest doubt that, if it did come to total war, the weapon of mass destruction would be used by both sides from the beginning. When people protest that no democratic government would ever agree to using the weapon of mass destruction in a given set of circumstances, they should clearly understand that what they really mean is that no democratic government would *go to war* in those circumstances. We should confuse ourselves less if, in the context of conflict between major powers, we stopped talking about "using the atomic bomb" and instead used the term "go to war."

The Second Air War—if it should come—would not remotely resemble the first one. There would be no slowly mounting crescendo of blitzes over a period of years, giving both sides time to get accustomed to it, to build up their active and passive defenses, disperse their war industries and attune their minds and way of life to endure it in the astonishing way the Germans did last time. The picture we have to envisage is a rapid succession in the first few weeks of cataclysmic disasters, compared to which the Hamburg "catastrophe" (as the Germans called it) would be child's play.

Can anyone really believe that any nation could put up with that and retain the ability to wage coherent war? To admit that this terrible fate would not fall upon one side alone is merely to acknowledge that we have at last reached that stage, which men have thought before now that they were reaching, when total war would amount virtually to mutual suicide. But, while the two great antagonists, Russia and the West, are both terribly vulnerable, Russia is far the more vulnerable to an attack of the two. Mackinder's geopolitical theories became largely outdated with the advent of the atomic airpower, and Russia's central position would put her at a decisive disadvantage in a world air war.

Winning a war means *creating world conditions more favorable for oneself than would have been possible if there had not been a war.* The world may take courage and hope from the fact that there is now general recognition that there is today not the slightest chance of anyone winning a war on that definition. That means not only that evil men will not take it on as an act of policy, but also that they are unlikely to take a chance on pushing their opponents to a point where they have no alternative but to resort to total war. For centuries men have dreamt of abolishing war. History is littered with the debris of leagues and pacts and pious resolutions designed to that end. None of them ever had any hope of being effective.

What has now happened is that total war has been abolished in the only possible way—*it has abolished itself*, now that new ultimate weapons of atomic and thermo-

*(Continued on following page)*

## About the Author

Sir John C. Slessor, Marshal of the Royal Air Force, is one of airpower's more thoughtful and articulate advocates. In true British military tradition, he was born in India, June 3, 1897, the son of the late Maj. Arthur Kerr Slessor, Sherwood Foresters. In World War I Sir John served in the Royal Flying Corps in France, Egypt, and the Sudan. He was wounded and awarded the Military Cross, first of a long line of decorations. Between the wars he did staff and command duty in England and in India and was Director of Plans, Air Ministry, from 1937 to 1941. He then, in succession, headed a bomber group, was Assistant Chief of the Air Staff, commanded the RAF's Coastal Command, was Commander-in-Chief of the Royal Air Force, Mediterranean and Middle East, and Deputy to Air Commander-in-Chief, Mediterranean Allied Air Forces. He became Air Chief Marshal in 1946 and Chief of the Air Staff of the RAF from 1950 until his retirement in December 1952. On a visit to the United States shortly before his retirement, he made this statement:

"When I joined [the British Air Service] as a young officer early in World War I, the world had just come to the end of 100 years of peace. That will go down in history as the Pax Brittanica. And it rested in the main on the power of the British fleet.

"It is up to us airmen to insure that the world now has at least another hundred years of peace—the Pax Atlantica. I believe the stability of the world can be preserved just as surely as it was between Waterloo and Sarajevo. And this time it will rest on airpower—largely, but not exclusively, American Airpower."

nuclear power are in the hands of both potential antagonists. Is it not clear, therefore, that it makes no sense to advocate the outlawing of atomic weapons as instruments of war? It never has been and never will be any use trying to abolish any particular *weapon* of war. What we have to abolish is *war*. So let us hear no more of banning the agency by which war has abolished itself, and which has neutralized the instrument by which the Kremlin has enslaved half Europe—and would soon overwhelm the rest if the atomic weapon really were to be taken out of the hands of the soldiers, or rather of the airmen.

One last word on this point. The validity of this case depends on the assumption that there is no effective defense against modern air attack. It is no doubt possible to devise a means of defense against the manned bomber as we see it developing; and it is not inconceivable that we might be able to do so against the pilotless long-range missile which will some day take its place. But, even if it proves scientifically possible to develop the weapon, it will not be economically practicable to provide it in the necessary numbers, manned by the necessarily highly skilled regular personnel, to provide over-all defense for great countries.

This is not to say that any bomber offensive of the future will get away without casualties; it is to claim that the old dictum "the bomber will always get through" will remain valid long enough for atomic and thermonuclear airpower to become decisive. So, while we cannot afford to neglect the defensive altogether, Britain and the United States must give the necessary priority to a striking force, not vastly superior in strength to anything that anyone else has, but strong enough to do the job and efficient enough to put the weapon down where we want to, if we have to.

Turning now to the second branch of our new strategic policy, some of the wisest words on that subject recently came from the pen of a great American statesman, Mr. Dean Acheson. "If it is said," he wrote in *The New York Times* on March 28, "that we cannot afford another war like Korea, the answer is that such a war is the only kind that we or anyone else can afford." And he pointed out that the only sound policy for a coalition of free nations requires not only an atomic striking force of great power, but also forces on the spot that can deal with lesser aggression. That is a profoundly fine and courageous statement by a man whose treatment by his political opponents is a source of bewildered astonishment to men from the allies of America who have been privileged to work with him.

We can take it as a foregone conclusion that our opponents, having decided that it would be too costly to overwhelm us by direct assault, will take every opportunity to turn or undermine our defenses by other means. We must look forward to a difficult era of what may be described as termite warfare—subversion, infiltration, and the exploitation of rebellion; fishing in the troubled waters of immature nationalism, of misgovernment and social inequalities in new states still in a rudimentary stage of political development, of religious hatreds and economic disequilibrium; and, almost certainly, other minor aggressions on the Korean model. Mr. Dulles' policy statement of January 12 about the New Look had the effect of creating a false impression, widespread among America's allies, that the policy of the United States would be, on their own initiative, to meet such minor aggressions with massive retaliatory power at the place of Washington's own choosing—to be more specific, that another minor aggression like that of June 1950 would be countered by the atom bomb on Moscow or Peiping. That was so obviously nonsense that the more recent disclaimer by the Secretary of State should hardly have been necessary.

But his assurance that the United States would consult their allies before loosing the terrible sanction of atomic airpower may be a voluntary reminder to those who still imagine that America can safely "go it alone" in the modern world. The trouble-maker, the infiltrator, and the minor local aggressor (and, what is more, the men behind the scenes who really manipulate the strings in these puppet shows) now know that retaliation swift and terrible awaits them if they go too far. But it is politically childish to imagine that public opinion in the Western World would stand for instant atomic retaliation leading to world war, as a counter to minor local aggression wherever and whenever it happens. The people of America themselves would not stand for that. Moreover, statesmen have to take into serious account the public opinion of others, including some great Asian states who, while sharing our democratic ideals, do not take quite such a clear-cut, black-and-white view of these issues as we do. Here is a context in which the United States would be wise to take counsel of British Commonwealth countries more than they sometimes do.

To counter the tactics of the termite will be mainly the responsibility of the State Departments and foreign offices of the Free World. But there are no grounds for assurance that there will not be more "Koreas" in other parts of the world. And for that we must retain a sufficiency of forces of the appropriate type, which—as in the original Korea—will mainly be land forces, with air cover and support. Another time we may see Russian troops employed instead of merely their proxies, as we did for instance in Azerbaijan some years ago. That sort of situation may well face the democracies with an intensely difficult and critical decision as to where to draw the line beyond which an affair of outposts becomes a mortal threat to a vital interest or principle. The essential then is to be quite clear about our political aim in this prolonged conflict of wills and ideas. That surely is not merely to contain militant communism, but by the gradual intensification of pressures to drive it back behind its own frontiers—and to do so, if possible, without allowing the local incident to blow up into all-out war. If we pursue that aim with patience, firmness, and consistency, and if we are able and ready to use the necessary force, then it will be possible—and will unquestionably be desirable—to localize and isolate these incidents, as we did the war in Korea.

The function of atomic airpower will be the big stick in the background, to keep these affairs from spreading—to prevent the minor tactical episode from developing into the mortal threat. To adhere steadfastly to that policy will be a high test of the quality of democracy; but the time will come when the enemy will realize that there is no future in these tactics, and we can even look forward to the gradual restoration of sanity to a distracted world and the dawn of a real international rule of law.

A word of explanation of the "Air Control" theory, of which the application in this context has been the subject of some misunderstanding, here seems desirable. Air Control, as exercised by the RAF in a number of small "brush-fire" wars in the nineteen twenties and thirties, was a method by which the will of government was imposed upon a tribal enemy by a few bomber aircraft, instead of by the traditional and expensive method of invasion and battle on the ground. Its essential

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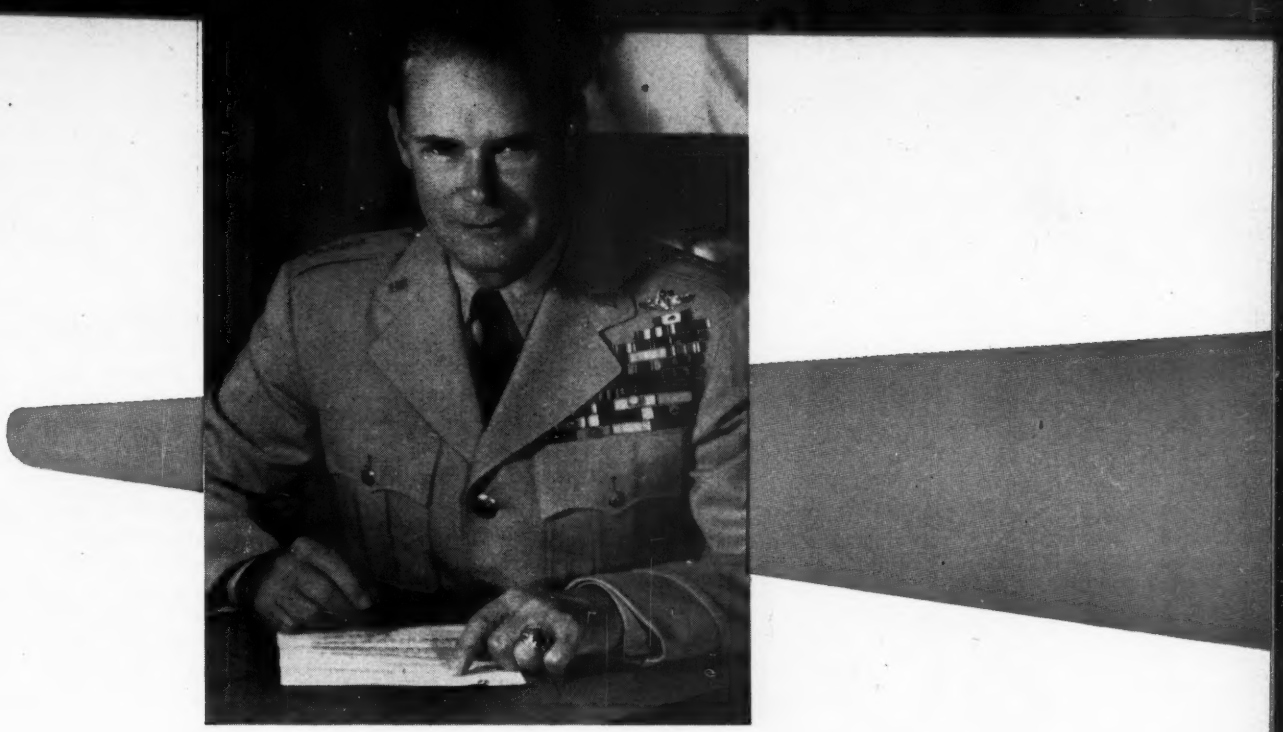


January 24, 1899—April 2, 1954

# General Hoyt S. Vandenberg

APRIL 2, 1954, was a sad day indeed for American airpower. For on that date, at 1:05 p.m., Gen. Hoyt Sanford Vandenberg, USAF Ret., died of cancer at Walter Reed Army Medical Center, Washington, D. C. Only 55, he had filled his too-short life with courageous service to the nation and the Air Force he loved so well. His untimely death cost the Air Force a brilliant leader and Air Force Association a devoted friend.

Air Force Association was proud to count General Vandenberg as a member of its Board of Directors, elected at the same Convention in Washington last August at which he received from AFA its top award as "Aviation's Man of the Year." His speech accepting the award was his last public utterance and was made with a voice obviously shaking with emotion. (See page 32.) The audience seemed to sense that this was the valedictory of a gallant fighter and received it with a moving ovation. The citation which accompanied the award outlined as well as anyone could say it, General Vandenberg's contribution to our nation's security. It read:

"In the last decade the USAF has met the challenge of world war and of limited conflict, and has served as the primary deterrent to further aggression on a global scale.

"Gen. Hoyt S. Vandenberg has provided inspired leadership, first as a combat commander and then as Chief of Staff of the Air Force. During all of this difficult

*(Continued on following page)*

## From one gold bar to four stars—the making of a military statesman

↑ **2D LIEUTENANT Vandenberg, fresh out of West Point in 1923.**

**IN THE '30s Vandenberg went to schools and instructed. By 1940 he had worked his way up to major (left) par for the course in those days.** ←

← **IN WORLD WAR II advancement came fast. By 1944 he had accumulated two stars and commanded the 9th Air Force in France, the largest combat air force ever assembled. The WAC is Lt. Martha Thompson.**

→ **AT AN ENGLISH air base in 1944—From left: Maj. Gen. Ralph Royce, Lt. Gen. Carl Spaatz, Maj. Gen. Hugh Knerr. Standing: Brig. Gen. Edward P. Curtis, Vandenberg, and Brig. Gen. George McDonald.**

↓ **BY APRIL 1945 a third star was about to light on the Vandenberg shoulders as he participated in decoration ceremonies in Luxembourg with CG Hap Arnold and Tooey Spaatz.**

↑ **SOMEWHERE IN EUROPE as Germany tottered on the brink of defeat—Gens. Spaatz and George Patton, Lt. Gens. Jimmy Doolittle and Vandenberg, and Maj. Gen. O. P. Weyland, later to run air war in Korea.**

period he has courageously fought for the development of the airpower concept. For distinguished service contributing to national security and world peace, the Air Force Association designates Gen. Hoyt S. Vandenberg as Aviation's Man of the Year and presents him its H. H. Arnold Award for 1953."

General Vandenberg's service as Chief of Staff, in the difficult period from 1948 to 1953, capped a military career which had an inauspicious beginning. Born in Milwaukee in 1899, he was graduated from West Point in 1923, 240th in his class of 261. But that was the last time that Hoyt Vandenberg stood far down on any list.

As a pilot he quickly won a reputation as a crack flyer and aerial gunner. His first command was the 6th Pursuit Squadron, Hawaii, 1929. During the 30s he built a solid foundation for top command as a staff officer, tactician, and both student and instructor in the Army's professional school system.

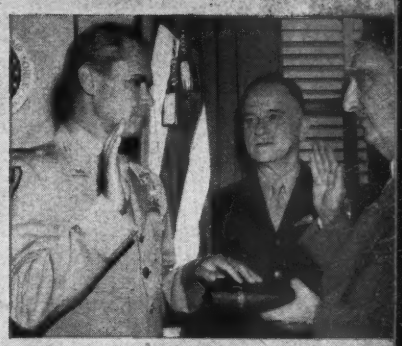
In World War II Vandenberg went up fast. In Air War Plans when war broke out, he later went to England with Jimmy Doolittle, helped organize the 12th Air Force for the North African invasion. Twelve months after Pearl Harbor he had his star and was serving as chief of staff of the Northwest Africa Strategic Air Force.

Called back to be deputy chief of staff of the USAAF, Vandenberg learned the meaning of global conflict. He went to Moscow with the mission that laid the groundwork for shuttle-bombing to and from Russian bases. He served on President Roosevelt's staff at Quebec, Cairo, and Teheran. In 1944 he acquired a second star, commanded the Ninth Air Force which provided tactical air

**WITH AFA's TWO Jimmies, Stewart and Doolittle, at a New York luncheon celebrating AAF's 40th birthday, August 1, 1947. By that time Van was Deputy Commander of the soon-to-be-independent Air Force, No. 2 man to Tooey Spaatz.**

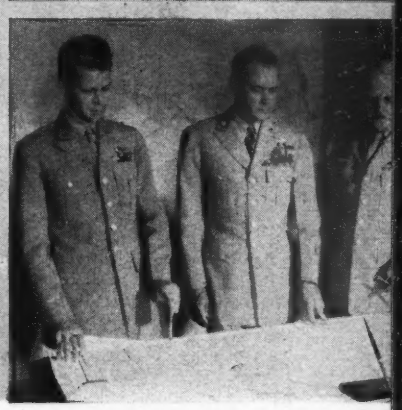
**AS PRESIDENT TRUMAN signed the proclamation making August 1, 1947, "Air Force Day." Also present were Norstad, Doolittle and W. Stuart Symington, then Assistant Secretary of War for Air.**

**WITH HIS FOURTH star, as Assistant Chief of Staff, waiting to testify before House Armed Services Committee in February 1948. Adm. Louis E. Denfeld and Gen. Omar N. Bradley were set to speak for the Navy and Army respectively.**



**THE LAST STEP up the ladder. Being sworn in as Chief of Staff to succeed Gen. Spaatz. Chief Justice Fred M. Vinson administered the oath. The date—April 30, 1948.**

**THE SYMINGTON-Vandenberg team worked well together, tried hard for the 70 groups that the Finletter Commission had recommended. But it took the Russian A-bomb and Korea to jar the country into the fact it needed an Air Force.**



**THE PLANS were sound even if the planes were missing. Vandenberg got able assistance from Norstad (left), then his deputy for operations, and from the late Gen. Muir S. Fairchild, who served as Vice Chief of the Air Staff.**

support to General Bradley's ground forces in Europe, became a lieutenant general in 1945.

After the war he served briefly as G-2 of the Army, then donned mufti to become first head of the newly formed Central Intelligence Agency. When the Air Force won recognition as an independent arm he returned to it, became deputy to Gen. Carl A. Spaatz, the USAF's first chief of staff. He was forty-eight when he got his fourth star and looked, as *Time Magazine* put it, "like a college senior playing the last act in Cavalcade."

The following year, 1948, he succeeded Spaatz when things were getting hot. The seventy groups recommended by the Finletter Commission for minimum security by 1952 had been held to forty-eight by Presidential impounding of funds. The AF was forced to concentrate on SAC at the expense of interceptors and fighter-bombers. The "revolt of the admirals" put the B-36 and the retaliatory strategic concept on the spot. Then the Russians exploded an A-bomb three years ahead of schedule. And Korea caught us with what Vandenberg doggedly referred to as a "shoestring Air Force." The Air Force decided that 155 wings, as it now called them, would be needed by 1954 as a minimum survival force.

The Joint Chiefs demurred but Vandenberg persisted, came out with a JCS recommendation for 143 wings by 1954 and a break, for the first time, in the "balanced force concept" which had been a millstone around the neck of airpower. But the program was first stretched out till 1955 and it received its *coup de grace,* in General Van's opinion, last year when $5 billion was lopped from the AF budget.

A sick and weary Vandenberg went up to Capitol Hill to plead his cause for the last time. "No sound military reason," he said, "has been offered to explain why the Air Force buildup to the agreed force level is again to be delayed. . . . Rather than reduce our efforts to attain air superiority over the Communists we should now increase those efforts.

"In closing, I want to emphasize that this country, if it is to have a chance for victory in any major war, must have an Air Force that is second to none."

But tactician Vandenberg's last campaign was a defeat, in his estimation, even though this year's budget calls for substantially the same force—by 1957. The $5 billion cut remained. Vandenberg was retired on June 30, 1953, and only months thereafter went to Walter Reed to die.

Brilliant combat service and meticulous staff work had led Vandenberg to the Chief's job. The times were troubled and difficult for the nation and the Air Force, back in 1948. The greatest Air Force the world has ever known had been virtually disbanded. Warfare itself was in the midst of a revolution based on the deadly combination of

*(Continued on following page)*

AN EXCELLENT golfer, who shot in the low eighties, Van took time off in the summer of 1949 to relax at White Sulphur Springs, W. Va.

A JET-LOVER from the beginning, the Chief of Staff hopped out to Indian Springs Gunnery Range in a T-33 to attend the Second Annual Aerial Gunnery Meet at Las Vegas, Nev. April 4, 1950. Some of the gunners he watched that day were shooting for keeps in Korea only little more than two months later.

BY JULY 13, 1950, the balloon was up and Van was in Korea, looking grim as he heard the report of 5th AF's Maj. Gen. Earle E. Partridge.

THE BOSS of a global Air Force had to get around. Here he consulted his Arctic expert, Col. Bernt Balchen, as they sailed across a bay in Greenland.

jet engine, nuclear weapons, and electronic gadgetry.

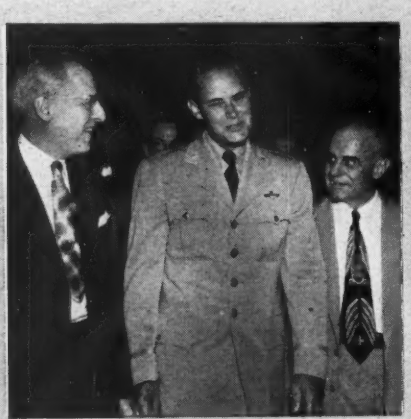
Vandenberg grasped the implications of the revolution in weapons, enlisted the aid of the best scientific brains he could muster to help solve them, built his strategy around the overwhelming retaliatory capacity of the long-range jet bomber coupled with the atomic bomb. When money was scarce he held steadfastly to the strategic concept, built up SAC against heavy criticism. He became the architect of the atomic striking power which, almost alone, has proved the shield for the Free World against global aggression.

And, as the hot pilot of the 20s had matured into a thoughtful leader, so did he force the Air Force to mature with him. He helped design the new blue uniform, resurrected the salute and soldierly discipline, put the grommet back in the cap. And he lived long enough to see his basic premises proved correct, with his beloved Air Force formally acknowledged—by the Administration, the Congress, and the American people—as the capstone of our military establishment.

This country's debt to General Vandenberg was clearly outlined by the nation's editors upon his death. *The Baltimore Sun* put it this way: "That the US stands today where it does in airpower is to a great extent due to General Vandenberg's intensity of belief." . . . *The Dayton News*: "His integrity always spoke to him in that stern, inflexible voice that forbade him to take refuge in comfort at the expense of convictions." . . . *The San Antonio Express*: "Because Hoyt Vandenberg lived and worked America today can rest the more secure and hope for peace." . . . *The Nashville Tennessean*: "The country . . . can reflect upon the fact that national defense would be greater than it is if his

AT A PRESS conference at LA Convention with Tom Lanphier.

GEN. VANDENBERG heard the airman's side of the Korean fracas from B-29 gunner Leonard B. Everesole, when the chief of staff visited Okinawa-based 19th and 307th Bomb Groups of FEAF's 20th Air Force in fall of '51.



AT DETROIT AFA convention he chatted with Doolittle in '52.

**THE SHOOTING WAR was in Korea but the cold war in Europe bore watching. With Norstad, by this time a full general, at Paris's Orly airport, during an inspection trip in October 1952.**

**THE CRUSHER. During his losing fight for the 143-wing program General Vandenberg was called to testify before a Senate Appropriations subcommittee hearing at 10 a.m., June 3, 1953. By noon he still hadn't been questioned. Ill and tired, he tried to rally his strength.**

advice had been followed."... *The Boston Herald:* "He stubbornly refused to compromise his professional estimate of what the Air Force needed and what the risk was if they did not get it." . . . *The Salt Lake City Deseret-News Telegram:* "Gen. Hoyt S. Vandenberg probably had the clearest vision of any American of the atomic age defense concepts."

For samples of this "clearest vision" one has only to scan his public utterances. In August 1949 he said, "The military security of the United States . . . cannot be bought as a luxury item that varies with our moods and the fluctuations of our fears."

In June 1950, *ten days* before Korea: "The responsibilities of the Air Force today are extremely heavy. We believe that the resources available to us are inadequate. . . . There are no barriers between us and the enemy and the hours that separate us are few."

In May 1951: "If we had today the Air Force we failed to buy two or more years ago our military problems would be relatively minor. . . . You cannot just 'mobilize' an air force. It has to be there when you want to use it. People cannot rise to fight in the air just because a bugle or a siren sounds."

In January 1952: "Neither this nation nor its allies can afford to adopt a strategy calling for an endless line of garrisons along the entire perimeter of Communist power."

In April 1952: "If we get a cut in the budget, it will probably be as late as 1957 before we get a 126-wing Air Force." At last year's budget hearings: "If it should be decided next year that the Air Force will, after all, have 143 wings, it will then be impossible to recruit and train the personnel for such a force before 1957."

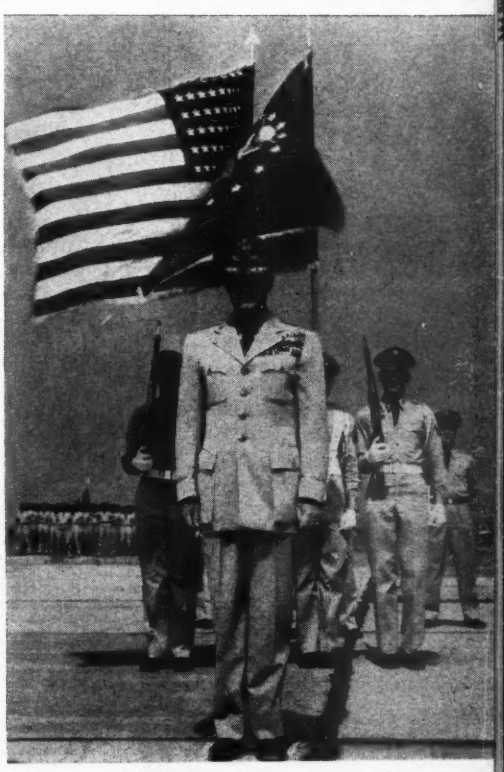
Illuminating in view of the AF's newly announced recruiting program (see page 13), is this statement of January 1953: "During the next twelve months we could, except for manpower ceilings, enlist more than 100,000 men . . . to train as replacements. But at the present time we are forced to turn away 9,000 volunteers a month while enlisting only 3,000."

Clearly, this man, as the *Manchester* (England) *Guardian* put it, "never lost sight of the fundamentals of American strategy." His life's philosophy was perhaps best expressed in his own words: "No life contains more of the satisfaction of conscientious effort than the military life. Yet no service demands greater sacrifices in peace and war."

His own service was brave enough in war but his greatest sacrifice was made during days of perilous peace.

*(More about Gen. Vandenberg on following page)*

**HOW FAMILY traditions begin. At William's AFB, Ariz., June 16, 1953, as son Lt. Hoyt S. Vandenberg, Jr., has his fighter pilot wings pinned on by his wife, Sue, daughter of Lt. Gen. and Mrs. Leon Johnson. The general was guest speaker at formal graduation ceremonies for his son's class.**



**THE END OF the road. After thirty years of commissioned service which took him from the open cockpit of an ancient pursuit plane to the softer but just as uncomfortable Pentagon swivel chair, Gen. Hoyt Sanford Vandenberg, USAF, receives the full honors of his profession in retirement ceremonies at Bolling AFB, Washington, D. C., on June 30, 1953. But the well-earned rest was to prove all too short.**

With then Board Chairman Harold Stuart at AFA's Airpower Banquet at the Convention in Washington, D.C., August, 1953.

**The general's last public utterance—to accept AFA's 'Aviation's Man of the Year' award at the 1953 Airpower Banquet last August**

# 'THE UNITED STATES IS NO FRAIL REED TO BE BENT BY A SINGLE BLAST'

OF ALL THE honors that may come to a man, none can be more deeply satisfying to his spirit than that accorded him by his own kind. My professional career has been spent in a realm of ideas and action familiar to most of you. You and I are animated by a common faith arising from shared experiences. That you, my one-time brothers in arms, fellow-toilers in the vineyard of the airpower idea, should do this for me now, when there are so many others more deserving of the honor, makes me humble and also proud.

After all, retirement is still for me a new and occasionally disquieting experience. There comes inevitably to a man who has carried certain responsibilities a momentary loneliness when he wakes up one morning to find that he no longer possesses the familiar task and he must find new work for himself. Now, in this splendid gathering I feel acutely the continuing sense of kinship, the common purpose, the shared sense of responsibility for the nation's security. Whatever you may undertake, rest assured of this: I stand ready to join you and to help in any way I can.

It is hardly a secret that various things I had to say in this city not so long ago were contrary to views earlier expressed by other sincere and honest people. Having served my country so long as a professional soldier, it was difficult and painful for me to make the required decision. There can be an honest difference of opinion over what constitutes an adequate defense for this nation. The moral thing in our democracy, I hope, will always be for a responsible military man to respond candidly when Congress asks his opinion, even though his opinion may not be comforting.

What I now fear most is complacency in the midst of inexorably rising peril. There occurred the other day a happening that should give us all serious pause. I refer, of course, to the explosion of a hydrogen device in the depths of the Soviet Union.

Whether this explosion was a test article or a bona fide weapon is, in the long run, academic. If Russia does not now actually have such a weapon, she will soon have one. And its addition to Soviet Russia's already vast accumulation of armaments, both conventional and unconventional, will further narrow the margins of power on which we Americans have so far counted for safety.

When I read that news, my memory went back to the year 1949. The government had come into indisputable evidence that the USSR had broken the secret of the atomic bomb years ahead of the date calculated by many of our scientific experts. There was an intense debate at the highest levels of the government over whether this country should proceed at once with the hydrogen bomb, in order to maintain our advantage. And once again many wise and experienced men argued against the idea our enemies would ever catch up.

Well, the pace of events is certainly quickening.

I am not one of those who face the future with despair. The United States is no frail reed to be bent to the ground by a single blast.

But if we doze, if in our complacency we forget the deadly earnestness of the enemy, his ever-increasing technical competence, and his undoubted ability to deliver his new weapons, then, I say, our strength will not avail us.

You, my friends in the airpower community, understand this better than most. God speed you in your task of arousing our countrymen.—END

**In state at Washington National Cathedral while the Air Force and the nation mourned his passing.**

*The Annual Long-Range Reserve Program*

# Every Spring, Just Like the Dandelions

**By Edmund F. Hogan**

IT IS spring again in Washington, the season when nature blooms in deep purples, golden yellows and brilliant greens, the time when cherry blossoms turn the Tidal Basin into a technicolor page from a child's fairy book. It is the time of the annual descent of those pilgrims who have yearned to walk through the White House or stand in silent reverence before the seated figure of the Great Emancipator.

It is another time, too. It is the time for the annual announcement by AIR FORCE Magazine of the "new, long-range Air Force Reserve Program." But this year the beautiful picture is slightly out of focus. Spring, for the Reservist, will be a little late this year. There is no new, long-range program to announce—yet.

This is not the fault of AIR FORCE. The magazine had hoped to follow time-honored custom, but the newest of the long-range programs is bottled up in the Pentagon, stamped with a fat classification. It will be at least a month—perhaps longer—before the new, long-range program emerges from the hidden recesses of the Concrete Cobweb and, even then, who can guarantee that it will be new, or long-range?

It is difficult to foresee how the problem of the Reserve can be divorced from the problem of airpower-in-being. In the age of weapons capable of destroying a city in an instant, second-best airpower is, as Gen. George C. Kenney once said, about as useful as a second-best hand in poker. It wins you nothing. (See page 16.)

If the required Air Force-in-being does not exist, any emergency is accompanied by hasty scrambling for bodies to build the establishment up to where it should have been in the first place. As witness the recall for the Korean war.

In 1947 a commission appointed by President Truman and headed by Thomas K. Finletter, later to become Secretary of the Air Force, grimly assessed the undeniable importance of airpower in the modern age and declared flatly that the United States must have a seventy-group Air Force in being not later than January 1, 1950. In the same year a Congressional Aviation Policy Board reached the same conclusion.

Three years later North Korean Communists crossed the Thirty-Eighth Parallel. The Air Force then stood at forty-eight groups. Congress had appropriated for the seventy groups but President Truman had impounded the money. At the start of a war that was to last approximately three years, the Air Force was twelve groups lighter than competent authorities had recommended as its peacetime size.

**But Honey, they need me in San Antone.**

There existed an immediate need, not only to build the Air Force to seventy groups, but to go beyond. So the recall mechanism was fired up and some 150,000 officers and airmen, veterans of World War II, were hustled into blues.

A number of study groups recently have pointed out that this, in effect, subjected the Reservists to double jeopardy. But the nicety of the term escaped the chap who had to leave the old homestead, the wife and three youngsters, and rush off to San Antonio to be transitioned in a B-29. Particularly, if the subject hadn't pushed a throttle in seven years.

If you can believe the stories, this recall was fairly thorough. One recallee insists he was processed with an oldster who had been a balloon pilot in World War I and who, having escaped service in World War II, was quite shaken by the proceedings which made him combat material again.

There is reason to doubt that the Air Force ever would have been embarrassed by the now famous "sit-down" strike of 1952 when recalled Reservists refused to fly B-29s at Randolph, had the Air Force been seventy groups strong when the Korean war erupted. Certainly the need would have been for fewer than 150,000, and the recall might have been more selective, to boot.

But the 150,000 Reservists were not the only ones caught in the squeeze. So was the Air National Guard.

In a hasty buildup it is impossible to reach required strength with individuals alone. There must be units. And the most cohesive, most available units in the Air Force Reserve structure were to be found in the twenty-seven Air Guard wings. Twenty-two were called to active duty.

This was a gamble every Air Guardsman took when he held up his right hand and subscribed to the oath of enlistment or commission. But few were prepared for what happened to them after they went on active duty.

*(Continued on page 54)*

## Why We Are Defending Japan

# RED SHADOWS OVER THE RISING SUN

American F-86s prowl the skies above Mount Fujiyama.

By Earl H. Voss

***Geography favors a Communist air attack on Japan, juicy industrial target for Red raiders from Asian bases***

JIMMY Doolittle and the hundreds of World War II pilots who followed him over Japan to drop everything from leaflets to atom bombs will feel a twinge of irony when they hear this:

The United States is presently providing Japan with an excellent air defense.

Some very recent alumni from the Japan Air Defense Force are the source of this claim, and there is no reason to discount it.

Certainly, the air defense of Japan is better than that of almost any other country in the world with the possible exception of Soviet Russia, which has an infinitely longer border to patrol.

But how good is any air defense? How safe from air assault is the second best, possibly the best, defended country in the world? Is it much less vulnerable than other countries?

The American commander of the Japan Air Defense Force, Maj. Gen. Roy H. Lynn, put it this way in an article in *Army-Navy-Air Force Journal:* "A realistic appraisal of JADF's fighter strength and over-all air defense capability indicates that JADF can cope with the threat of potential Communist aggression."

General Lynn undoubtedly was looking on the bright side. But he added qualifiers: "That is not to say JADF has ALL the personnel, ALL the air power, needed to perfect Japan's defenses. A commander rarely feels he ever has enough to completely satisfy the magnitude of his assignment. But in purely physical terms of what is currently available and that which JADF is capable of absorbing in event of all-out war, prospects of successfully repelling airborne aggressors are more heartening than at any time in the past."

Looking closely, it develops that the general did not say he could defeat anything the Communists throw at him. He merely said he could "cope" with it. What does this mean?

From talks with defense officials while in Japan recently, and from general postwar experience with the caliber of United States intelligence about the Soviet Union's military capabilities, this correspondent is ready to conclude that General Lynn probably had no intention of claiming that he could stop any Red air attack on Japan.

The question of Japan's air defense involves four principal questions:

- What does Japan have that we want to defend?
- What is the nature and strength of the threat to Japan?
- What defense does the United States Air Force provide?
- When and how can the Japanese take over their own air defense?

There is no blinking the fact that Japan is important to the West. She has strategic position and productive power.

Japan, of course, is the workshop of Asia. Her industries are far and away the most highly developed in the Far East. Red China and India have at least a decade to go before they can hope to approach the Japanese level of productive capacity. Mao Tse-tung would, first of all, prefer to capture this prize intact. Failing this, he would try to deprive the free world of using it against him in an all-out war.

General Lynn classifies the island

empire's target areas into three geographical regions.

First there is Hokkaido. From the Japanese standpoint, this northernmost island is menaced by the Russian-held semi-circle formed by Sakhalin and the Kurile Islands. From the Soviet Union's point of view, however, Hokkaido with its US Army and Air Force installations is a dagger pointed at the eastern fastnesses of the Soviet empire.

Hokkaido, of course, is not a large industrial area. Its importance is primarily strategic. It is a potential base for counterattack and for warning of air attack. It also would be a logical site for Red invasion, possibly by paratroops, if things ever get to that stage.

The central plains area of Honshu, on the other hand, would be the prime objective of any enemy bent on destroying Japan's capacity to wage or support war. The Tokyo-Yokohama and Osaka-Kobe-Kyoto areas today contain:

- 55 percent of the nation's steel production.
- 27.7 percent of the iron.
- 75 percent of the heavy industry.
- 90 percent of Japan's automotive works.
- 52 percent of her precision manufacturing.
- 72 percent of the country's total exports.

General Lynn put the case for defending the Honshu industrial complexes very convincingly recently when he said, "No area of comparable size in the entire Far East can match the industrial potential of Japan's central sector."

The southern Japanese island of Kyushu is the third geographical region of Japan being defended by JADF. It has several vital ports and the large industrial city of Nagasaki. Besides, it forms the southern approach for attacking aircraft headed for the central plains.

As with the Ruhr area of Western Europe, the United States is probably as much interested in keeping the Japanese productive potential out of the hands of the enemy as in using its output in prosecuting any war that might come. Japanese output is still small when compared to that of the US. But one need only recall the showing Japan made against the West in World War II to emphasize how much trouble she could make if her factories fell into hostile hands and their output were put into war-disciplined distribution.

So much for the need for defending Japan.

A few minutes' study of the accompanying map shows how geography favors a Communist air attack on Japan. The country is literally hemmed in. On the west there is almost nothing but Communist country and on the east, the Pacific.

The big question, of course, is what the Russians, North Koreans, and Chinese have handy for the attack. Roughly, the Red arsenal breaks down into two parts—aircraft and explosives.

When you pin down our intelligence people, you find that it's hard to learn much about what the Russians have in the Far East. The Iron Curtain is just as effective in the Orient as it is in Europe. The principal sources of information are air reconnaissance, whose limitations are obvious, and Japanese repatriates, who aren't always reliable.

Recent Far East Air Forces intelligence reports which have been cleared for publication indicate that there are now 700 new IL-28 jet bombers and about 2,500 MIG fighters based in the Far East. Here is a partial breakdown of their dispersal over some thirty fields, most of them within range of South Korea and Japan.

**In Red China.** Some 125 to 150 IL-28 jet bombers are disposed strategically up and down the China coast. Some are based opposite Formosa. But most are in the Shanghai, Tientsin, and Peiping areas.

**In Manchuria:** There are fifty IL-28s. If the war in Korea were resumed, these undoubtedly would come into play to knock out South Korean airfields and other military installations. There is no indication that they could not reach Japan, too, if occasion warranted. Their principal purpose, however, seems to be as reserves for the jet bombers in North Korea.

**In North Korea.** The Reds have stationed about 100 of their IL-28 bombers and 200 to 300 of their MIG-15s here. Of course, these, too, are available for offensive operations either in South Korea or Japan.

**In Siberia.** Intelligence reports released by FEAF group Sakhalin and the Kuriles with Siberia. They estimate that the Russians have between 350 and 400 of their IL-28s and some 1,200 to 1,500 MIGs in these areas. Many of these are based on Sakhalin and in the Kuriles, just a few miles from Japan's northern island.

What this geographical proximity has come to mean in the jet age is already well-known. Secretary of State John Foster Dulles has warned repeatedly of Japan's extremely vulnerable position. Even piston-engined planes could be over Hokkaido only a few minutes after takeoff from Sakhalin and the Kurile Islands bases. Vladivostok is about an hour away for jets.

What kind of payload the jet

*(Continued on following page)*

**PRIME TARGET AREAS in the Japanese islands are Hokkaido, closest to Soviet territory; the industrial complexes on Honshu, including the Tokyo-Yokohama manufacturing centers; and Kyushu, guarding the southern approaches.**

bombers from Communist bases would carry is, of course, just about as important as the swiftness of the carrier. We have to assume that any invasion of Japan's air with explosives would be made with the full realization that World War III was therewith underway. Japan might well be one of the first targets to be hit in coordinated strikes at US production centers, American overseas air bases, and West Germany.

Under such circumstances the Communists could be expected to use atomic bombs on Japan in the hope of dealing a knockout blow. If the Reds have A-bombs to drop, the Japanese defense would have to be nearly perfect to avoid extensive damage. For it would take only a few bombers to get through into the Tokyo-Yokohama and Osaka-Kobe-Kyoto areas and do heavy damage. Industry is concentrated in the port areas.

There is also a psychological aspect. Japan, it will be remembered, is the only country of the world that knows the terror of the atom bomb first-hand.

How the Japanese populace might react to the news that A-bombs were dropping on their cities again is not hard to imagine. Large numbers of them in all the major cities rushed to the hills and mountains in August 1945 to hide from the American "barbarians."

One bomb dropped almost anywhere probably would disrupt Japanese production nationwide.

How can Japan and the United States prevent this catastrophe?

As already indicated, the command responsible for defending the island empire is the Japan Air Defense Force, headed by General Lynn.

Under him are three air divisions, the 39th, the 41st, and 43d, in northern, central, and southern Japan. The northern base is at Misawa on Hokkaido Island. The central base is located near Tokyo, and the southern base is at Itazuki air base, on Kyushu Island. Headquarters are in Nagoya, about 150 miles south of Tokyo.

Actually, Japan is such a small place that interceptors would have to get out over the sea to meet the aggressors if their defense were to be effective. Jet pilots who have flown long hours there point out that the Japanese islands are "only about thirty minutes" wide at their widest. Once over the islands, invaders would be hard to stop.

The JADF system is comprised of four elements: a radar warning net, a high-speed communications system, fighter-bomber and interceptor units, and anti-aircraft artillery.

The radar warning net is constantly being improved. Locations of the scanners are being changed to take advantage of the most strategic locations. More modern equipment is coming in constantly. Airborne radar probably is being used in vigilance missions, too.

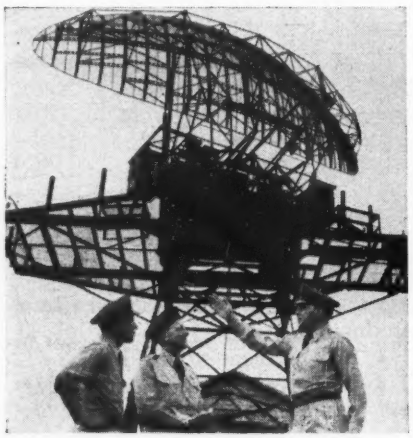
But even if the system works up to the high standards its designers hope for, there are two grim limitations, one of them common to all known radar warning systems, one unique in Japan:

- Radar is "blind" to low-flying aircraft, skimming over the top of the watery approaches to Japan.
- Even if radar detects the attackers, there will be only a few minutes' warning.

Radar operators are being trained not to dawdle over bogeys. Identification thus is likely to be less positive before alarms are sounded. But under present conditions the efficient traffic control centers manned by FEAF personnel usually can prevent scrambles for routine friendly approaches.

At present American airmen run the communications net, using the latest American electronic equipment for transmitting radar warnings of defense squadrons. Some of the equipment JADF uses is Japanese, of course. The Nipponese communications system is one of the best in the world, and far better than other Oriental nets. Equipment is now being modernized and with Japanese technicians and operators already "breaking in" on American gear, prospects are that this phase of the air defense system may be the first to be turned over to the Japanese completely.

Japanese who speak English are being allowed to take over some of the ground-to-air communications, as well. With the Japanese coming back into commercial air business, the need for bi-lingual communications personnel will increase, and the Japanese technicians are already hard at work mastering English.



**The radar net is being improved.**

As for aircraft, JADF has an all-jet force of Lockheed F-94 Starfires, North American F-86 Sabrejets, and Republic F-84 Thunderjets, all kept at the peak of readiness. However, there is some skepticism that these planes could operate at the high altitudes they might be called on to chase IL-28s.

JADF squadrons fly regular patrols over the Japanese islands, sometimes mixing practice dogfights with their vigilance missions. Heavy weather over Japan's mountainous islands—much of it coming off the Siberian wastelands to the northwest—provides excellent training conditions for all-weather squadrons. In contrast to the situation reported from Korea, pilots get just about all the time in the air they think they need, according to a squadron commander recently returned.

Desk men at the heavily populated FEAF headquarters in the Meiji Building of Tokyo and in JADF headquarters in Nagoya are still limited to their 100 hours, of course. But most of them take this sentence philosophically.

One of them pointed out, however, that it doesn't take so long for the chair corps to get back into the swing of things. He estimates that

*(Continued on page 39)*

**It had to be a clear day to get this shot, but heavy weather over Japan's mountainous islands provides excellent training conditions to test the all-weather capabilities of the F-94 Starfire squadrons.**

# RCAT's

Radio Controlled Aerial Targets—called R-CATS—are now the standard targets used in gunnery training of fighter pilots and anti-aircraft and airborne gunnery crews of the Armed Forces. These drones are maneuvered from the ground to simulate the attacks of an enemy; aloft they are an inexpensive substitute for "the real thing". Precision-built R-CATS are supplied in quantity to the U. S. Army, Navy, Air Force, and National Guard by RADIOPLANE COMPANY. They are one more product of the versatile Northrop team which has built the famous long-range Scorpion F-89 interceptors, Snark XB-62 pilotless bombers, range finders for Army tanks, and other materiel constructed to rigid specifications of the U. S. Department of Defense.

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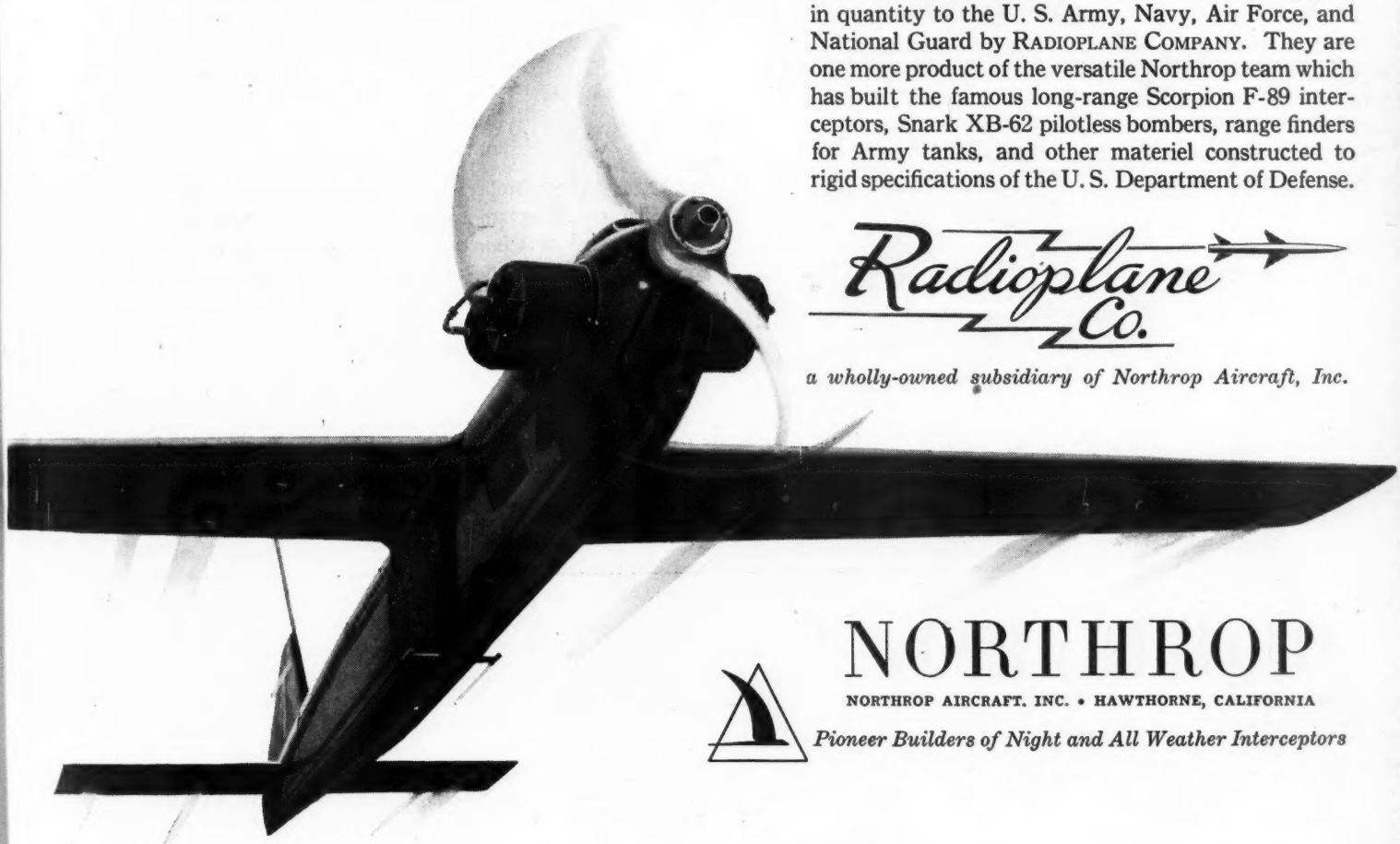

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# Formula for leadership in the GUIDED MISSILE FIELD

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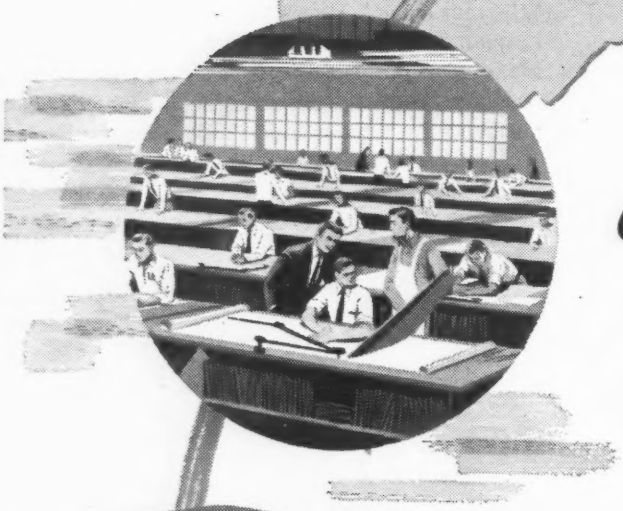
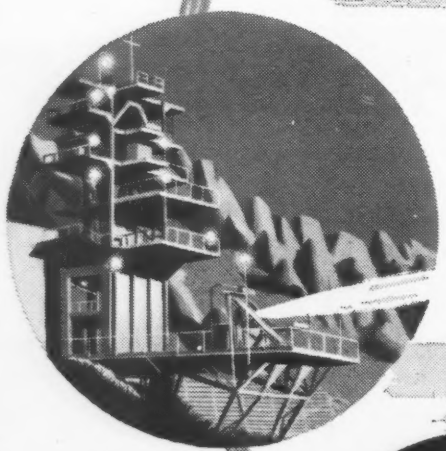
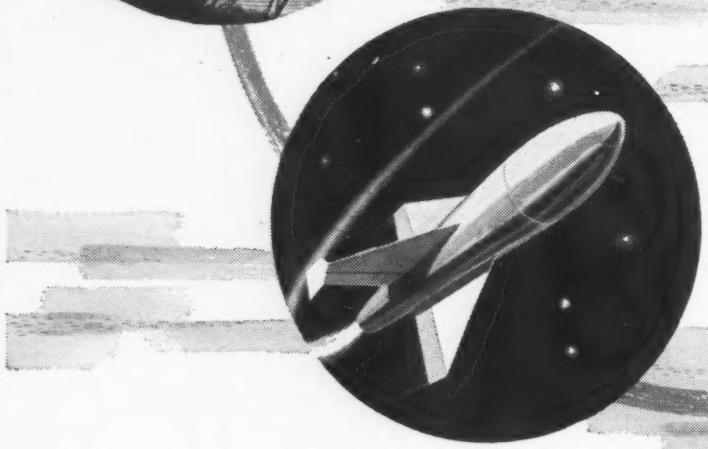


**ORGANIZATION**—Today North American Aviation's guided missile program is manned by more than 4800 highly skilled and imaginative scientists, engineers and craftsmen . . . many of them leaders in their particular fields . . . integrated into one of America's foremost organizations in guided missile development.



**FACILITIES**—Often invented to fit a specific need . . . North American's great array of technical equipment used in guided missile projects staggers the imagination. A great part of this equipment at North American's testing grounds and research facilities at Santa Susana and Downey, California is completely new and unique in American industry.



**EXPERIENCE**—North American began pioneering research in the guided missile field before V-J Day. The knowledge provided by North American's advanced work in miniaturization, rocket engines, fuels, automatic navigation and flight mechanisms . . . and in actual test firings . . . is helping to speed America's progress in all phases of guided missile development.

## NORTH AMERICAN AVIATION, INC.

TWENTY-FIVE YEARS OF BEING AHEAD OF UP-TO-DATE

seventy-five percent of the aces in the Korean war were converted desk men. If a new war comes these men would be right back hunting bogeys again. If they are provided planes and equipment that can cope with what the Communists have, they undoubtedly will more than hold their own in the air battles as they have in the past.

American pilots in tactical outfits now stationed in Japan train in instrument flying, gunnery, air-to-air interception, and weather flying. Recently, some of the squadrons have been training in air-to-air refueling. A flight of F-84Gs flew non-stop from Japan to Bangkok not long ago using the air-refueling technique. Since F-84Gs are known to be capable of carrying "baby" A-bombs, this increases the strength of the US retaliatory force in the Far East.

Dependence on seaborne fuel appears to be a weak point in the JADF set-up. Japan has little home-produced petroleum. If the Communists could spare enough submarines to blockade Japan, they probably could keep the jets on the ground for lack of fuel. How long enemy sub forces could operate in Japanese waters if the new American sub-chasing forces were sicked on them is, of course, a subject the Defense Department is not discussing.

Tokyo naval sources say the Russians have posted about one-third of their submarine force, some 125 vessels, in the Far East. There were reports in mid-February that one of the Russian subs had been sunk off Hainan Island, presumably by an American submarine. The Soviet subs are said to have been beating a regular path through the Straits of Formosa. From time to time Japanese fishermen also have reported seeing unidentified subs surface in the Sea of Japan.

American anti-aircraft is the last line of defense against enemy attack. But in spite of its modern radar gun-laying equipment and longer-range guns, the chances of AA stopping bombing runs once the raiders get through the jet squadrons' defenses are not rated very high.

Even if Japan should have the best air defense in the world, then, the degree of safety she enjoys is not impressive. More alarming from the Japanese standpoint, things will probably get worse before they get better.

There is already talk about the US pulling its security forces out of Japan. There is strong political sup-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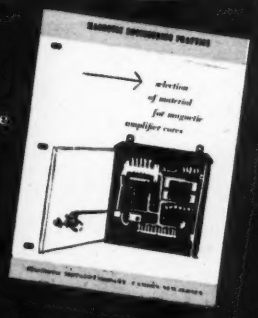

BULLETIN 52-1 is available to present data on selection of magnetic core materials and testing of magnetic amplifier cores.

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| HYMU | Extreme sensitivity at initial permeability densities. |
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port for this inside Japan among Progressives (conservatives not now in power) and Socialists. The Communists are fanning the spark, hoping it will build into a flame.

This combination of left and right is making it hard for the Liberal (conservative) government of Prime Minister Shigeru Yoshida to meet any kind of a self-help schedule.

The root problem is that the Japanese—once looked on as such a warlike breed—are not in any hurry at all to re-arm themselves now. American occupation authorities did too good a job of selling them General MacArthur's "Switzerland of the Pacific" theory.

Prime Minister Yoshida is going ever so slowly in nudging public opinion along the rearmament path. Even so he is on extremely shaky ground. Right now he is on the point of risking his premiership to push through a very modest defense program in the Diet, the Japanese Congress. The US has made its new military aid program for Japan contingent upon Nippon's doing something to build her own defenses.

To support even a small force the Japanese will have to brace themselves for an austerity drive. Their government leaders are gingerly mentioning the prospect and ducking for cover while the opposition howls about Japanese foreign policy being written in the American embassy in Tokyo.

Thus the gloomy picture for Japan's air defense: While there is talk that United States might pull out, the Japanese are lagging hopelessly behind in taking up the slack.

Meanwhile, the Communist threat isn't getting any smaller. Red air units in the Far East are not only getting more numerous, they're getting more modern. And the Communists are definitely interested in what goes on in Japan. Red reconnaisance planes have appeared over Japan too often for comfort.

As a result Japan issued the stern January 1953 warning, obviously aimed at the Soviet Union, that "violations of our territorial air over Hokkaido by foreign military planes" had become "increasingly frequent" and would be prevented in the future by Japan "with the cooperation of the American security forces stationed in Japan." Gen. Mark Clark, then US commander in Tokyo, backed up the announcement.

In the face of this obvious threat, the Japanese are hoping lamely that America will not leave her naked of air defense while they go slowly about building their own. They are betting, in effect, that Uncle Sam will continue to pick up the check after 1958-59, recently mentioned as the possible departure date for all American forces in Japan.

Even if American forces stay, however, it is likely that Communist airpower could inflict some heavy blows on Japan if the Reds were willing to expend the effort. The nightmare Nippon faces is the squadron of low-flying IL-28s—or quite possibly supersonic guided missiles—equipped with atom bombs. And in the event of all-out war, Japan might well find herself as vulnerable to submarine blockade as she was in World War II, when the US was on the blockading rather than the supplying side.—END

*Earl Voss got acquainted with the Far East during World War II and in a 5½-year stint in General MacArthur's public relations set-up. Since 1951 he's been with the Washington "Evening Star," revisited Japan recently.*

R.C.A.F. AIR-SEA RESCUE
AB 664
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An OTTER of R.C.A.F. Unit Churchill—at 0107 hours Aug. 30/53
made a spectacular landing on a tiny Arctic lake at the scene
of a Lancaster Bomber crash and successfully evacuated
the complete crew of eight and their equipment—
IN A SINGLE FLIGHT!
DESIGNED AND MANUFACTURED BY
THE DE HAVILLAND AIRCRAFT OF CANADA LIMITED
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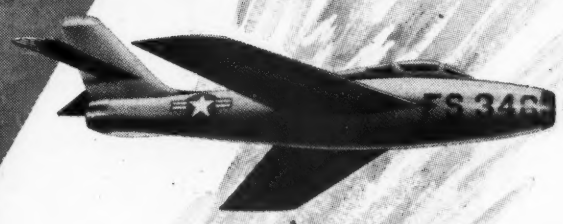
# PERIMETER PATROL



*The Republic F-84F* ***THUNDERSTREAK*** *. . . newest, fastest and finest in a rugged family of Thunder-craft fame . . . is in operational service with the U.S.A.F.'s Strategic Air Command.*

**REPUBLIC AVIATION**

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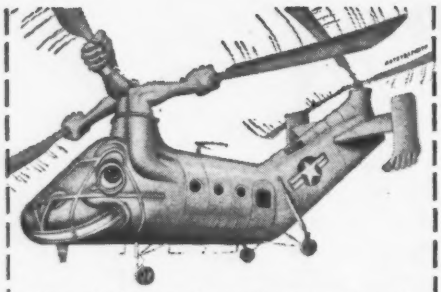
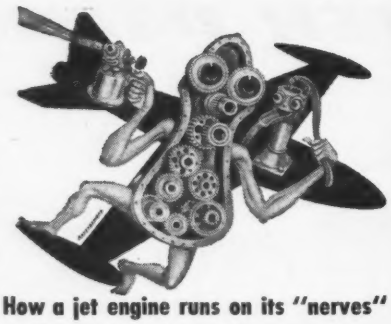


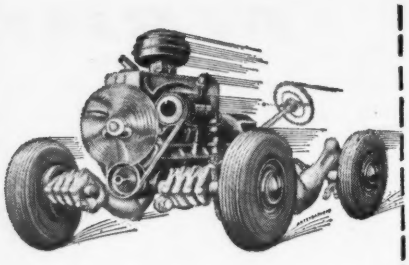
**How a helicopter hangs by its "elbows"**

For flexible "elbows"—625-part rotor assemblies that control the amazing maneuvers of its dependable H-21 "Work Horse" Helicopter—PIASECKI *looks to Lycoming!*



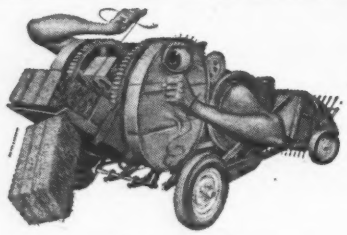
**How a jet engine runs on its "nerves"**

To produce the auxiliary "nerve center" for its J-40 jet engine—a complex gearbox that transmits power to vital engine accessories—WESTINGHOUSE *looks to Lycoming!*



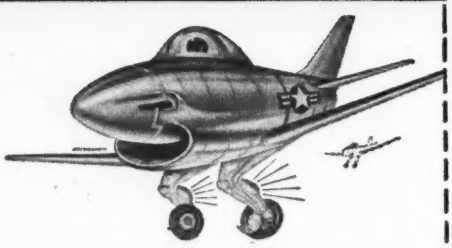
**"Sinews" to give cars "go"**

For vital automotive parts—mass-produced precision components that can "take it" year after year—leading automobile manufacturers like FORD *look to Lycoming!*



**Strong "wrists" for America's new hay balers**

For sturdy, dependable spur and bevel gears—"wrists" that drive the tying mechanism of its "one-man" time- and money-saving hay baler—NEW IDEA *looks to Lycoming!*



**"Leg muscles" that cushion a jet's landing**

For tough main leg cylinders that house the hydraulic action which enables the F-86 Sabrejet to absorb fast landing jolts—CLEVELAND PNEUMATIC *looks to Lycoming!*

# Small parts that play a "big part"

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# RENDEZVOUS

## Where the Gang gets together

**CBI VETS ASSOCIATION REUNION:** The CBI Veterans Association will hold its 7th National Annual Reunion August 5-8 in Washington, D. C., at the Hotel Willard. All former vets of CBI are invited. For further details write *Ex-CBI Roundup, P. O. Box 1769, Denver 1, Colo.*

**409TH BOMB GRP. (L) REUNION:** The third reunion of the 409th Bomb Grp. (L) is being held at Troutdate In The Pines, Evergreen, Colo., July 3 and 4. There is also a bulletin published regularly which former members should find interesting. Anyone wanting information on either or both contact *Bernard B. Bernstein, 6514 N. Albany Ave., Chicago, Ill.*

**68TH FIGHTER SQDN. ASSN. REUNION:** It's "Can Heaters" round-up time in Cleveland, Ohio, July 3, 4, 5. All members and their families interested in our gala reunion hurry and get in touch with *Pete Haluschak, Secty., 4882 Broadview Rd., Cleveland 9, Ohio.*

**388TH REUNION:** The 5th annual reunion of the 388th Bomb Grp. (H) Association will be held July 9-11, at Bedford Springs Hotel, Bedford, Penna. For reservations and information write *J. L. Deal, 115 Laird St., Greensburg, Penna.*

**PEN PAL WANTED:** I would like to correspond with a pilot serving in any Free World Air Force. All letters will be answered. *John Hanle, 1333 Ridge Ave., Steubenville, Ohio.*

**449TH BOMB GRP. (H):** All former members of the 449th Bombardment Group who are interested in having a history of the group published write to *Maj. Stephen A. Ogden, 449th Bombardment Group History Association, 660 Fifth Ave., New York 19, N. Y.*

**4TH BOMB WING:** Would like some information on a book about the 4th Bomb Wing of the 8th AF in World War II. *Robert M. Lester, Longlea Farm, Boston, Va.*

**2D AIR DIV.:** We want to get in touch with the 2d Air Division Association. Can anyone give us perhaps the name and address of the Secretary? *William H. Cuthbertson, USO, 500 Fifth Ave., New York 36, N. Y.*

*To be sure your Rendezvous item appears in the July issue, we should have your request by May 15.*— THE EDITORS.

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# HERE'S WHY SOME DON'T QUIT

***There has been a good deal of talk about why people leave the Air Force. Here are some reasons why many stay in***

**LET'S HAVE YOUR JET BLAST**

In "Jet Blasts" you can sound off on any subject you want. Each month we'll pick the letter or letters we feel will interest our readers most and pay $10 for each one printed. Please keep letters under 500 words.—The Editors.

We've had some fine democratic comment on why people don't reenlist, what's wrong with our officers, and discussions of great merit in the letters to the editor. It ill behooves me to dispose of these good writings in one fell swoop, but because of a more than academic interest in the subject of reenlistment I must forego personal comment in the interest of brevity and this message from those who are staying with this great Air Force of ours.

Those who stay say that there'll always be an Air Force. That the Air Force is made up of the same cross-section of people you find in any organization, great or small, in these United States. That the vast majority have stamina, initiative, foresight and professional skill. That the Air Force will always be led by great men—and last, that the Air Force is bigger than any individual in it.

Those who stay know that any human element is subject to error and that we have weaknesses in individuals whether commissioned or enlisted. Realizing this, those who stay are motivated to render unqualified support and service to the end that the weak are strengthened, the strong are rewarded, and the mission is thus fulfilled.

Those who stay know that Air Force policy, subject to the provisions of law, budget and national policy, is made and refined by its commanders and that these processes are necessarily slow. In recognition of these complexities, those who stay retain the requisite faith and loyalty which makes for eventual correction or disposition of temporary inequity. This faith and loyalty stands secure in the knowledge that our legislative and executive bodies, through normal processes, will do the best for the most.

Those who stay say that anyone who can read and write can be a self-appointed critic—but all critics, if competent, must also be able to recommend a valid solution to the problem. In plain words, there's always room and welcome for a man with a plan. The ordinary, or garden-variety, critic generally proves to be the usual individual who lacks the facts and loves to see his name in print. His answer to the problem, in most cases, is "I quit—I'm getting out!"

Anyone can quit—but problems are never solved by running away from them—and quitting certainly doesn't require intestinal fortitude. However, those who stay say that a career in this great organization is like marriage—you get out of it what you put into it and it's what YOU make it. The careerist is most always an individual with constancy, faith and loyalty to the team who knows that sooner or later there is a logical answer or an objective solution.

Those who stay, and are qualified to stay, have framed their convictions in these words:

"We will set and follow the requisite standards of accomplishment, conduct and devotion to duty because we are convinced that the Air Force is a proper repository for our confidence and faith and a fit custodian of our destinies.

"We believe that the Air Force can guarantee each person the opportunity to show what he can do; that it can guarantee us a living and working environment in which to acquire that human dignity which accrues to responsible people; that it can guarantee us participation in the objectives of an honorable profession and the opportunity to pursue an ideal.

"Without reservation, we believe these guarantees to be meaningful. The Air Force cannot rightfully promise less—and we, as members of the Air Force, cannot expect more."

We salute, with utmost respect, those who are not career-motivated but who are serving their obligated service well and faithfully. We hope that you, and those who have finished their service before you, will support the Air Force and its Reserves to the fullest extent. We congratulate and welcome those of you who become career-motivated and stay with the team.

Lt. Col. Uriel P. D'Acosta, USAF
Arlington, Va.

## PINUVRCC

I read with interest Mr. Hogan's story on the various studies of the Air Reserve program in your April issue. I must admit to a modicum of confusion as to the various classifications such as Active Reserve, Inactive Reserve, Ready Reserve, Standby Reserve, Non-Affiliated Reserve, Ineligible Status List Reserve, Immediately Callable Reserve, Selectively Callable Reserve, Front-Line Reserve, Stay-Home Reserve, etc.

As a result, I formed an independent splinter Reserve study group right in my own neighborhood, consulting such authorities as the garbage man, the man who comes (frequently) to fix the television, and—to benefit from the advice of active duty uniformed personnel—the mailman and the man who reads the gas meter. This board, known as the Peoples Independent Non-Affiliated Unassailable Voting Reserve Cogitation Committee, usually referred to by the abbreviation PINUVRCC, concluded that, in the interest of clarity and unambiguity, the Reserve should be broken down into the following elements, which we submit are both realistic and implementable, subject to recall in this order:

1. The "Let me at 'em, my wife doesn't understand me anyway" Reserve, subject to immediate recall. (In fact, you'll have a hard time keeping 'em out.)
2. The "What the hell, business isn't so good and a little active duty wouldn't hurt" Reserve. (Likewise.)
3. The "Retirement's cheaper than buying annuities" Reserve. (No active duty, please.)
4. The "Try and find me" Reserve. (Two-time losers.)
5. The "We don't know where the hell they are" Reserve. (Or, how inactive can you get?)

The complete findings of the PINUVRCC are in the process of being forwarded through appropriate channels. They are now being reviewed by a civilian consultant in East Overcoat, New Jersey, and should reach the Pentagon by 1961.

Hopeful Reservist

## Tornado Damage

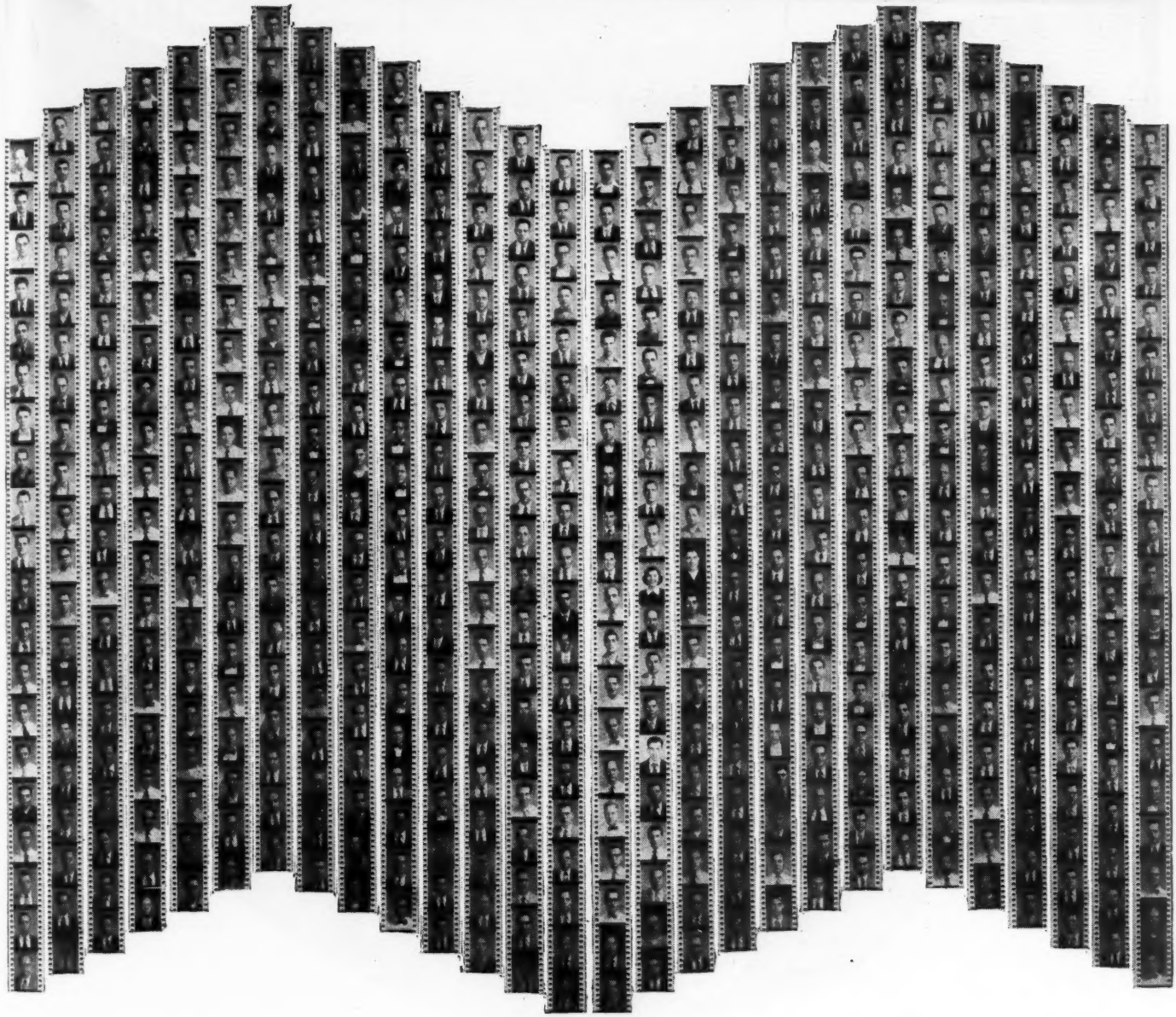
The press reports on March 15—taxpayers' day—regarding the $20,000,000 tornado damage at Lawson AFB, Ga., where eight C-119s and ten refueling trucks were smashed within minutes, brings to mind again a problem that should have been resolved years ago. Further damage examples which are well-known but too easily forgotten are the $15,000,000 tornado damage at Robins AFB, Ga., a year ago, the B-36 debacle at Carswell AFB, Tex., the million dollar damage at Tinker AFB, Okla.

In each case local authorities rush to the weather office breathing fire in a manner which is the natural tendency.

However, such is absurd for the simple reason that present forecasting knowledge will not permit advance warning of tornado arrival at a given point within plus or minus one hour, for example. It should be mentioned that the valuable work of Lt. Col. Fawbush and Major Miller of the Tinker AFB Severe Weather Warning Center has improved tornado forecasting methodology. On the other hand, recent base evacuation plans for severe weather require that the base commander exercise his judgment in balancing cost of aircraft evacuation vs. possible damage from the weather phenomena—an impractical requirement until tornado forecasting accuracy is further improved.

It might be proposed that the best

*(Continued on page 47)*



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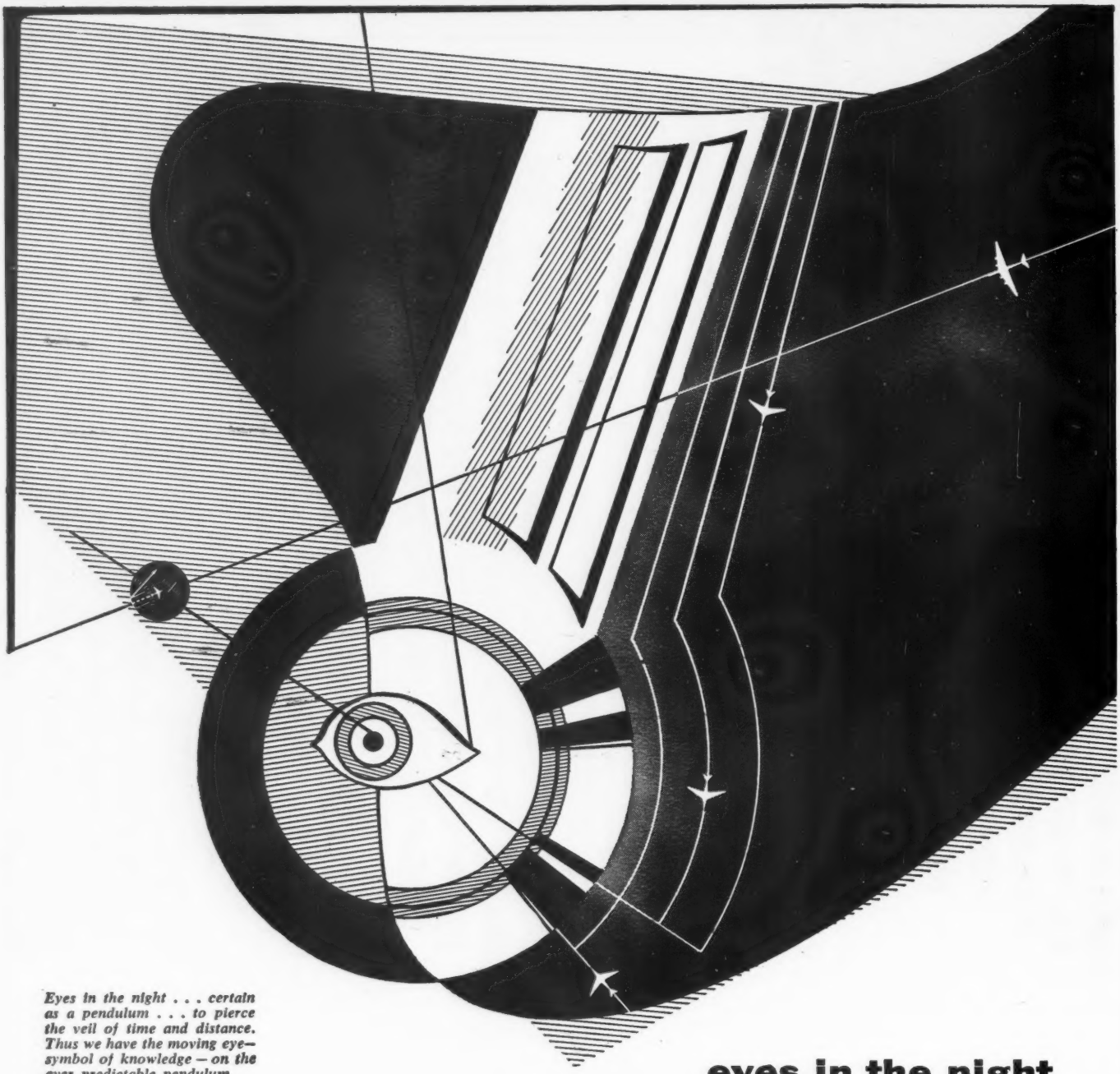

*Eyes in the night . . . certain as a pendulum . . . to pierce the veil of time and distance. Thus we have the moving eye—symbol of knowledge — on the ever predictable pendulum.*

## eyes in the night

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answer is: Get the large and/or expensive aircraft out of the Tornado Belt!

The old argument that certain states have less severe winters than others or more VFR flying days per year may be valid when applied to primary and basic training phases, but should not be pertinent to operational crews and aircraft. I had fewer icing problems during Alaskan winters than encountered in the ZI below the 37th parallel.

Of course, winter operations are generally hardier in Maine or Idaho than they are in Texas or Georgia, but the occasional bumping of a rock-filled cloud does not match the cost of eight C-119s clobbered at one throw.

Capt. R. H. Hodges, AFRes
Bridgeport, Conn.

## Only the Finest

Sure and it warms the cockles of me heart to read the squabbles starting between the observer and the pilot (re February issue). Now and be glory, I wonder if we will see two different types of recruiting posters, "Only the best can fly—be a pilot," and "Only the finest can direct—be an observer." Maybe it will finally reach a point, as it does with us grounders, when nice old ladies will ask the observers, "Sonny, what branch of the service are you in? You can't be in the Air Force as you aren't wearing *pilot* wings, and the color of your uniform is wrong for the Navy and Army."

The policymakers of the Air Force took a big step forward lately when they laid down the thought that henceforth members of the different major commands should take more pride in being in the Air Force than being in, say, the Tactical Air Command or the Air Defense Command. Unit identification is fine, it undoubtedly helps create esprit de corps, but not when various commands take precedence over the Air Force. And speaking of esprit de corps, since when did anyone hear a Marine bragging that he was a scout, BAR gunner, or a basic rifleman, or that he was in the Second Marine Division or the Fifth Division? No—his proudest claim is "I'm a Marine!"

Isn't it about time that the Air Force and all its members take the same philosophy? We understand how vitally important it is to have a sufficient number of applicants for cadets, and we know that these men are truly outstanding. But—how about devoting some of the recruiting effort to proclaim "Only the finest can wear the Blue—Join the Air Force." Let's forget our internal differences of being Reserve or Regular, rated or non-rated, pilot or observer, and give out with the idea that teamwork is all-important, and that every member of the Air Force team (yes, even the garbage collector) belongs to the world's finest—THE UNITED STATES AIR FORCE.

1st Lt. Willis E. Lorey
New York, N. Y.

Behind the thousands of AEROTEC B-20004-RW Flow Indicators and Check Valves now in service are months of development and tests. An important safety feature of this control is a solid metal wall between switch housing and fuel chamber. The unit is designed to function at a specified flow rate and prevent reverse flow while operating in any position. Metal to metal valve seating eliminates O-ring swelling, sticking and assures long life. The AEROTEC B-20004-RW has passed Spec MIL-E-5272 and is suitable for fuels AN-F-32a, AN-F-48b, AN-F-58a.

Modifications to the following specifications of the B-20004-RW are available: Closes electrical circuit on increasing fuel flow at 400 lb. per hr. and above, reopening circuit when fuel flow decreases below 400 lb. per hr. Maximum pressure drop through valve not over 8″ $H_2O$ at 1000 GPH flow.

Check valve characteristics: Rate of leakage on reverse flow does not exceed 1 milliliter per minute when pressures from 75 psi to 4″ fuel are applied to outlet port. Will withstand vibration frequencies of .010 double amplitude from zero to 100 cps and ±5 g's vibratory acceleration from 100 to 200 cps. Let AEROTEC'S qualified engineering staff help solve your automatic control problems in the aircraft field. One of our specialists is near, ready to serve you. Call or write him today.

When you think of Automatic Aircraft Controls, you should automatically think of AEROTEC.

*Project Engineers*

**THE THERMIX CORPORATION**
GREENWICH, CONNECTICUT

(Offices in all principal aircraft centers)

*Canadian Affiliates:* T. C. CHOWN, LTD. Montreal 25, Quebec • Toronto 5, Ontario

**THE AEROTEC CORPORATION**
AIRCRAFT DIVISION — GREENWICH, CONNECTICUT

Designers and Manufacturers of Automatic Controls—*Valves:* Regulating, Relief and Check types—*Pressure Switches:* Gage, Altitude, Differential and Absolute Types—*Float Switches:* Top, bottom or side mounted—Single, Dual, or Tandem.

features were first due warning to enable non-combatants to be removed to a place of safety; and secondly the ability to suspend action the moment the tribesmen notified their willingness to comply with simple conditions of surrender. This method, however, was only used against the crude mud villages and forts or the scattered tents and herds of primitive tribesmen, in the mountains of the Indian frontier, the marshes of Iraq, or the deserts of Arabia. It was never used to quell disturbances in more settled and civilized territories such as Palestine, and was always recognized as quite unsuitable for use in these conditions.

Paradoxically enough, its methods—preliminary warning and instant suspension of action on compliance with terms—seem more likely to be applicable, on a vastly greater scale, if it should become necessary to use atomic airpower either in a last-minute attempt to prevent total war, or to wage it. It is perhaps not inconceivable that air control might be brought into play in connection with a minor aggression; but it is a little difficult to imagine circumstances in which its use in such an event would not involve an unacceptable risk of doing just what our policy should be concerned to prevent—namely, blowing up the local incident into atomic Armageddon.

Of the political front in this cold war of the "long haul" it is more difficult to write objectively, and quite impossible to be very specific within the bounds of a short article. The one over-riding fact about it is that victory or defeat will depend on preserving and strengthening the unity of the English-speaking peoples.

And let it be understood that in this context the English-speaking peoples of the British Commonwealth include not only the older Dominions but also the nation with the largest Moslem population in the world, Pakistan, and the second biggest nation in Asia, India. English is the *lingua franca* of the Commonwealth. And these two great Asiatic nations have inherited our British traditions of government, share our ideal of Parliamentary democracy and (though both have now adopted republican constitutions) look to the Queen as the symbol of unity and the Head of the Commonwealth. United States policy must always reckon with the influence of these 400 million Asiatics on British strategic thinking.

It is not to underrate the renascent vigor of Germany nor to ignore the debt which we owe to the civilizations of France, Italy, and Greece, to say that the future of the Free World depends on whether the British Commonwealth and the United States continue to pursue a common policy and purpose. That means more than mere lip-service to the democratic ideal, more even than concerting our strategic policy and pooling our strength in regional pacts where our common interests are subject to direct and obvious military threats. It means continuous consultation and coordination, and developing a habit of working in terms of each other's interests as well as our own, in almost every field of international policy and economic endeavor. It means at first deliberately cultivating the consciousness, which should in time become instinctive, that on any long view the interests of the Commonwealth are America's interests, and vice versa. And the interests of the Commonwealth are closely bound up in many parts of the world with those of other countries, where American policy directly affects that of some Commonwealth country or other.

To Britain that has perforce already become virtually instinctive since our decline from the status of the world's richest and most powerful nation. For America, in her new-found strength and in the immaturity of her youth, it will be more difficult, and will demand a somewhat more sophisticated approach to international relationships. The United States can point to massive achievements in the international sphere—Lend-Lease, the Baruch Plan, Marshall Aid, NATO, and her original initiative in Korea—all of them things of which any American may justly be proud. But Americans should realize that to many people outside America there is very much a reverse side to the medal. Anti-colonial sentiment (which few Asiatics recognize as having anything in common with their own), internal political pressures, the untrammeled activities of certain sections of American business, and a certain naiveté and tendency to oversimplification in the handling of foreign affairs have left legacies of bitterness and instability in many parts of the world, which it will take all our combined wisdom and statesmanship to put right. And today it is not only what Americans do outside America which matters in the world; a Huey Long could do what he liked and no one outside America cared, or even knew of his existence; but the antics of a McCarthy can do untold harm to the cause of America's world leadership.

America has done marvels since she emerged, so recently as history is measured, from the security of the Monroe Doctrine—that shield that was held between her and the world for a hundred years by the British fleet. She has got to grow up into the full status of world leadership which, whether she likes it or not, is hers. Her people must understand that the first essential of world leadership is, not that they should be liked (we British were not liked when we led the world) but that they should be respected and trusted. And her governors must remember that, if her leadership is to endure, she cannot stand alone but must be able to rely upon the willing cooperation and support of the British Commonwealth of Nations.—END

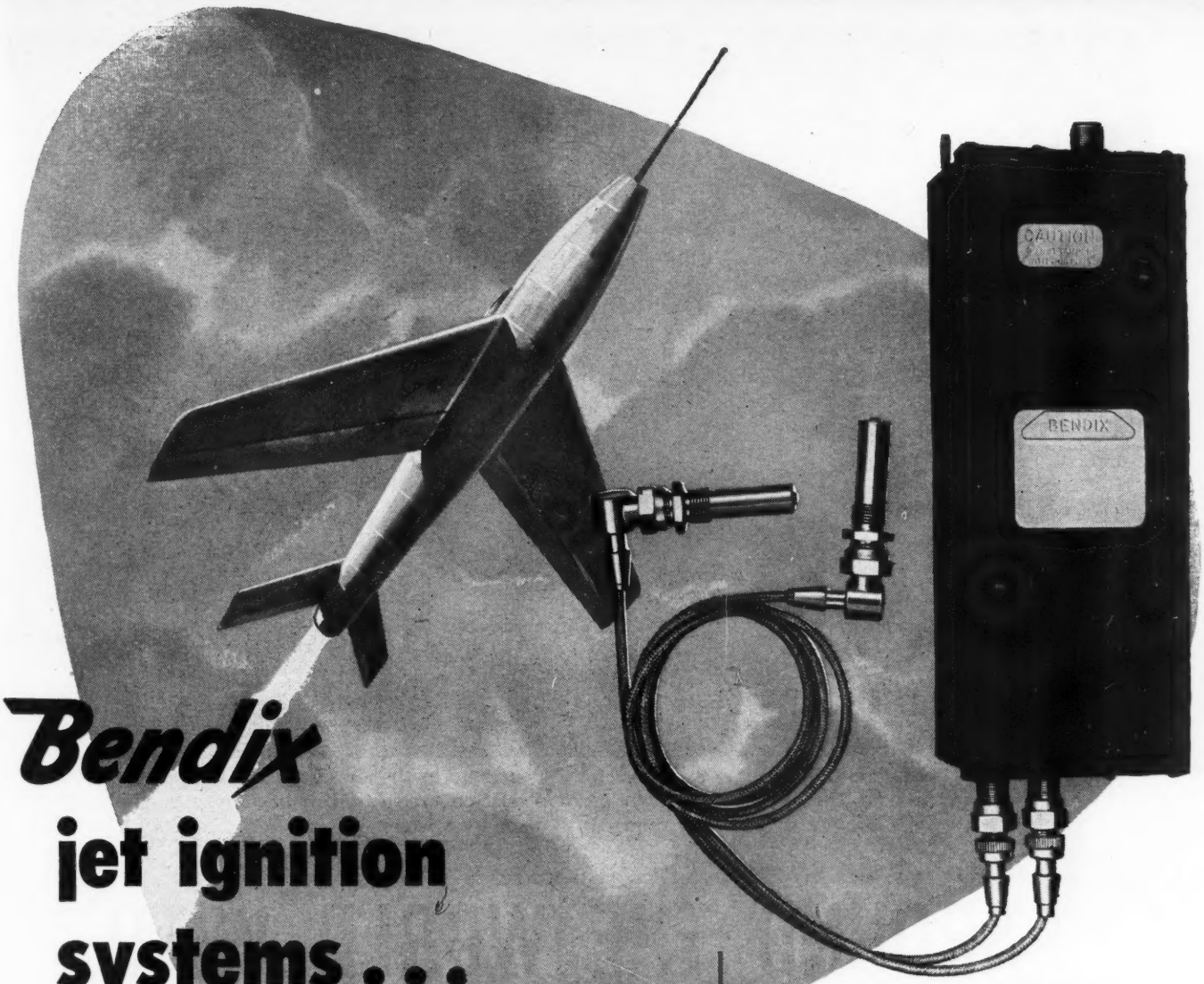
## About the Story

It was one thing to decide to ask Sir John to write this article for AIR FORCE Magazine, another one to find him. He is a much-traveled man, as we quickly discovered. Our original letter was answered by Lady Slessor, from their home in Somerset, England. She told us that the Marshal of the RAF was then in Pakistan, that she did not know how to reach him, but that he was due home early in April. Unfortunately, this was uncomfortably close to our copy deadline.

As an alternative, therefore, we requested permission from the British Broadcasting Company to reproduce the first of two talks Sir John had made over its network early in the year. (See page 23.) Permission was granted and we once more wrote to Lady Slessor and told her of the new arrangements. Meanwhile, we sent the BBC talk off to the printer.

Then a second note from Lady Slessor informed us that her husband was now in Iraq, that she had been in touch with him, that he was hard at work on the article, which, as she put it, "may even be finished by now as he writes so quickly."

At best it was touch-and-go whether the new manuscript would arrive in time for our deadline so we proceeded as we planned with the BBC script. We were about to lock up the pages when a letter from Sir John came in from Habbaniya, Iraq. The manuscript was finished and on its way. It arrived, in Sir John's own handwriting, since he would have lost a day by having it typed. We read it and felt it would be worth the extra effort to tear up the magazine in order to bring it to you this month. And, as of this writing on the eve of presstime, we are glad we made it.—The Editors.




# Bendix jet ignition systems . . .

## *streamlined for maximum efficiency!*

Although jet ignition is a comparatively new development in the fifty year span of powered flight, progress in this vital phase of aviation has been truly remarkable.

Unlike ignition design for reciprocating engines, which has remained relatively constant, jet ignition has gone through several major design changes within the past few years.

For example, a comparison of the TLN-10 jet ignition system, produced by the Scintilla Division of Bendix, with earlier designs shows significant improvements in every operating characteristic —and at the same time original cost, operating expense and weight are substantially reduced.

Here, indeed, in the Scintilla TLN-10 jet ignition system, is a classic example of how the present national policy of greater value for the taxpayer's dollar is being put into practice.

**SCINTILLA DIVISION OF Bendix**
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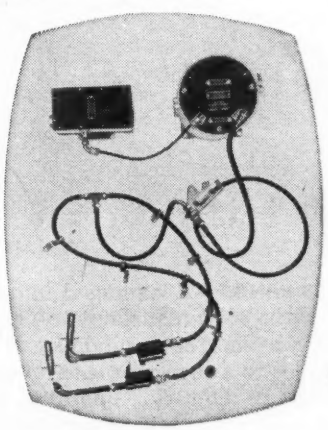
### TLN-10 SYSTEM

**WEIGHT 7 LBS.**

- Lower Cost—Simplified Service—Weight Reduction—Requires less current.
- Higher wattage available at igniter plug—Improved starting over entire range of operation—Virtual elimination of plug fouling difficulties.
- The TLN uses low voltage only and eliminates problems encountered with production and control of high voltage, such as dielectric losses, corona, capacitance loading, and flashover.
- Smaller size—Easier installation—Leads used will withstand exceptionally high temperatures—TLN-10 System is engine mounted whereas TEN-1 was both plane and engine mounted.

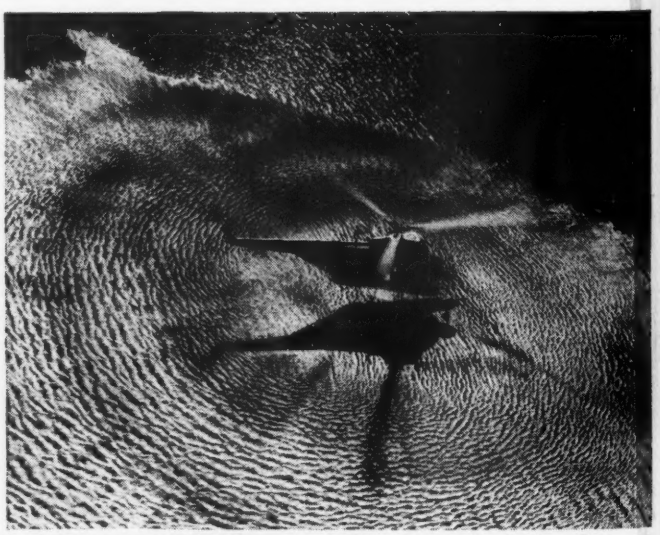


**EARLY DESIGN**
**WEIGHT 37 LBS.**

**FLYING BARRACK**—This igloo-like shelter, designed for Marine Corps use in the field, can be transported by air. The dome is 18 feet high, 36 feet in diameter, and can shelter up to 40 men. Even in a stiff wind, the 1000-pound plastic-covered hut can be moved easily from place to place by a Marine Corps HRS Sikorsky helicopter.

# AROUND THE WORLD WITH SIKORSKY HELICOPTERS

**WILDERNESS WINGS**—A damaged light airplane was "rescued" from the frozen surface of Thunder Bay on Lake Superior by a chartered Sikorsky S-55 helicopter, and flown 25 miles to a repair base. Ambank Airlift, Limited, of Ft. William, Ontario, operates the new Canadian charter service, with S-55 equipment exclusively.



**PRACTICE MAKES PERFECT**—This unusual photo shows a Sikorsky H-19 helicopter over the Han River near Seoul in a simulated rescue of a downed pilot. The practice mission by a U.S.A.F. Air Rescue crew was similar to nearly one thousand actual rescues during the Korean war, made on land and at sea behind enemy lines.

**HELICOPTER EXPRESS** — Regularly scheduled Air Express flights in Southern California form a new service started last December by Los Angeles Airways, Inc., and the Air Express division of Railway Express Agency, Inc. Big Sikorsky S-55s, like that above, and S-51s, are used for the speedy shuttle to cities as far inland as San Bernardino.

# SIKORSKY AIRCRAFT

BRIDGEPORT, CONNECTICUT

*One of the Divisions of United Aircraft Corporation*

## NEW WATER-BASED AIRCRAFT

# FASTEST IN HISTORY

## Allison T40 Turbo-Prop engines give Navy's R3Y a top speed of more than 300 knots—enable take-off with full load in 30 seconds

A NEW era in global air transport may well have been inaugurated when Convair's new R3Y "Tradewind" successfully completed its initial test flight off San Diego Bay recently.

For this slim-hulled craft has been hailed as the "fastest big seaplane in aviation history," designed to carry high pay loads long distances at nearly double the speed of previous water-based transport aircraft.

Four Allison T40 Turbo-Prop engines, each developing more than 5500 horsepower, give this 80-ton water-based transport a speed of better than 300 knots—with power to take off with full pay load in approximately 30 seconds. Propellers are Aeroproducts contrarotating, fully reversible which permit unlimited maneuvering and braking.

Scheduled to enter transpacific Navy service this year, the R3Y's now in production reflect the Bureau of Aeronautics' steadfast faith in the potential of Turbo-Prop power; Consolidated Vultee's latest accomplishment in its long-range program of pioneering water-based aircraft; and Allison leadership in Turbo-Prop development, in cooperation with both the Military Services and airframe builders.

GM GENERAL MOTORS Allison

DIVISION OF GENERAL MOTORS, INDIANAPOLIS, INDIANA

# The READY ROOM

## RESERVE AND AIR GUARD NEWS

Last year Air Defense Command tried out a plan under which selected Air National Guard units actually took on an active defense assignment—pulling alerts and taking part in ground-controlled intercepts. ADC was so pleased with the results that the program is being expanded.

At a briefing for a subcommittee of the House Armed Services Committee recently, **Brig. Gen. Winston P. Wilson,** chief of the National Guard Bureau's Air Force Division, said the "expansion in this program is to take place during the balance of Fiscal Year 1954 and will continue on a larger scale during Fiscal Year 1955." The program, he said, "will augment and strengthen the present air defense structure."

This little-known facet of current ANG operations provides ADC with aircraft and crews for immediate tactical operation. The Guard supplies aircraft, logistical support, and maintenance. Guard people in the units ADC desires volunteer for what in effect are short tours of active duty. Upon approval of Adjutants General of states concerned, orders are issued by a numbered Air Force through unit air instructors. ADC exercises operational control.

General Wilson said the Guard is on a ready-to-go status that would get some squadrons into action within forty-five minutes after an alert. He said forty-nine ANG squadrons will have 641 jet aircraft by June 30, which compares with about 1,000 jet fighters available to the regular Air Force for continental defense.

* * *

Air Force Reservists who join the Air Guard now must obtain conditional releases from the Air Reserve Records Center in Denver. When officers and airmen leave the Guard and revert to Reserve status, their personnel records now must be sent to the Denver center instead of to a numbered Air Force.

* * *

**Lt. Col. I. G. Brown,** who once served as sheriff in Hot Springs, Ark., has been moved up to assistant executive in the Air Force Division of the National Guard Bureau. A War II ATC pilot, Colonel Brown has been chief of the training section in the Bureau's O&T Branch.

* * *

ANG's **pilot training program,** which aims for 750 new pilots each year, has improved to the point where more than 500 potential flyers are in the pipeline. Some people have been lost, the Bureau feels, because they have had to wait too long between the time they applied and were accepted. A new policy is now in effect which could cut down the time required for complete processing.

Under the new plan, unit commanders will take applicants with all necessary papers to the nearest recruiting main station for pre-screening. Those tentatively qualified will be sent immediately to a personnel processing squadron where they will meet a board and be given a final physical.

The Bureau believes this policy will reduce processing time to one week.

* * *

**Notes on the back of a Form 175.** . . . NGB has issued a four-point plan to reduce taxi accidents. The plan involves continued training in all phases of taxiing, strict ground handling discipline, eliminating congested parking and inadequate lateral clearances, and setting up correct procedures on runways, taxiways, and parking areas. . . . The Bureau has issued a letter to units which establishes new methods for handling ANG reports of survey. These will be covered in a change to Air Force Manual 67-1, due soon. . . . ANG is being cautioned on the use of franked envelopes. Each envelope costs the Bureau 3.7 cents, regardless of whether it ever goes through the mails.

* * *

Continental Air Command has leased seventeen locations for **Air Reserve Centers.** Eight are located in First Air Force area, four each in the Tenth and Fourteenth and one in the Fourth. Facilities include a lecture room, offices, and space for files. Centers which will offer specialized training also will have electronic and aircraft engine labs, academic classroom, library and medical dispensary. Leases for the remaining thirty-three centers should be signed soon.

**Maj. Gen. William E. Hall,** Assistant Chief of Staff for Reserve Forces, appeared before the same subcommittee which heard General Wilson, and noted that these centers will simplify the structure of the Reserve program.

General Hall alluded to the Task Force study in the Pentagon ("What Gives With the Reserve Program?", AIR FORCE, April 1954), and commented:

"Although I am not at liberty to discuss the complete findings and recommendations of the Task Force, I can say without reservations that I see no material changes necessitated in the Air Force plan for its Reserve forces."

This task force study, originally due April 1, has been delayed and may not emerge from the Pentagon until later this month.

Meantime, General Hall told the subcommittee, the program "is improving and more interest is being shown."

To promote greater efficiency, General Hall said, a plan is being tried out at Mitchel AFB and Dobbins AFB under which the present permanent party force of two Reserve flying wings is being merged with the Reserve wing itself.

Brig. Gen. James B. Burwell, deputy for operations at ConAC, revealed that approximately 21,000 Reservists are participating in a paid status. He also noted that the average age of the Reserve pilot is thirty-two years and eight months and probably will go to thirty-six by the end of Fiscal Year 1956. It then should drop as younger pilots complete tours of active duty and join the Reserve program.

* * *

**On the subject of Congress:** At least fifteen bills which are of interest to the Reserve have been introduced in the House and are pending in committee. Another five have been passed by the House and are now before the Senate. Seven Senate bills are holed up in committee in the Upper House. The big piece of legislation at this moment is the Reserve Officers Personnel Act, ROPA for short. The bill was passed by the House in the first session of the present Congress after exhaustive hearings before the House Armed Services Committee. This committee's counterpart in the Senate aims to have a whack at it, too. The bill provides for promotion, date of rank, constructive credit, distribution, retention, and elimination of officers of the Reserve components of the Armed Forces.

* * *

Last month brought 875 **promotions** to Air Force Reserve officers. The promotions moved thirty-seven lieutenant colonels to colonel, 154 majors to lieutenant colonel, 642 captains to major, nine first lieutenants to captain, and thirty-three second lieutenants to first lieutenant. Of the total promoted, 820 are taking part in general and professional training in Reserve groups and squadrons and fifty-five are receiving specialized training.

* * *

More than $18 million in **construction funds** have been released for construction at twelve Reserve training wing sites. The money is for hangars, fuel storage, warehousing, administrative and training facilities. Grandview Air Force Base in Missouri received the largest allocation—$3,827,000. Air Reserve flying wings are located at all of the installations except Grandview and Alvin Callender Field in New Orleans. Flying units will be organized at these two fields when construction is completed, giving AF Reserve twenty-five of its planned thirty wings.

* * *

Reserve flying activities will stay at **Long Beach, Calif.,** despite demands of local citizens that training activities be moved elsewhere. AF Secretary Harold Talbott says that the Reserve flying training mission in that area must be located in the vicinity of the Reserve force population. Otherwise, Reservists cannot participate. Demands for moving flying activity out of Long Beach stemmed from two jet plane crashes there last winter, one of which caused casualties in a residential area.

**By Edmund F. Hogan**

From the time the Air Guard was organized in 1946 until the first units were recalled for the Korean emergency, great store was set by unit integrity. One of the most successful ANG recruiting pitches went something like this: "Join the Air Guard and serve with your buddy on active duty."

Two Air Guard units went to Korea as such—the 116th Wing of Georgia and 136th of Texas. The remaining twenty became one vast replacement pool. In at least one instance several ANG jet pilots were sent to Korea as individual replacements and assigned as transport copilots or to the T-6 Mosquito Fleet.

When the shock of what had happened took root in the Guardsmen they began to question whether they were members of a "brush-fire" organization.

Certainly, the Guard was used in the strictest interpretation of this

**Who said, "Serve with your buddy"?**

term. But the question arises whether it would have been necessary if the Air Force-in-being had been the proper size. In the latter instance, would there not have been enough transport crews on hand to eliminate the need for installing a jet driver in the right seat of a C-46?

It is true that this period is behind us but the hangover lingers.

In 1951, after the Soviet A-bomb and after Korea, the Air Force took a long look at its global commitments and the increasing strength of Soviet airpower and recommended 155 wings as an eventual minimum number, to be attained by 1954. The Joint Chiefs of Staff pared this recommendation to 143. But stretchouts and cutbacks, like the whopping five billion dollar slash last year, started the roller-coaster down once more. The new goal became 137 wings with an immediate objective of 120 wings by mid-1955.

The most polished experts find the numbers game difficult at best but event the amateurs knew that the down-hill ride would have ill effects. Long-range planning involves putting manpower into the pipeline long before it comes out the other end and goes on active duty.

In the pipeline were thousands of Air ROTC cadets, for whom the Air Force expected to have spaces as second lieutenants when they were graduated. Last year some 12,000 came out of this pipeline coincident with the five billion dollar cutback. Suddenly, there were just too many bodies around for the authorized Air Force size. To get the machine back on the right track, the Air Force heaved out 6,000 officers. It was called a "Reduction in Force" but the effect was the same. And many of these 6,000 were World War II veterans who had been recalled for Korea and who had decided to stay in, rather than attempt another start in civilian life and gamble on triple jeopardy the next time an emergency arose.

And because the roller-coaster went down, the last word has yet to be said on the ROTC problem.

This year's ROTC graduates will number about the same as last year. But approximately 4,800 are faced with the alternative of serving two years on active duty as airmen or taking their chances with General Hershey's Selective Service system.

This is the background. When the current crop of ROTC graduates entered college four years ago, the Air Force believed it would be large enough to accommodate all who would be commissioned from the program. Last year's RIF could hardly be repeated this year to make the required number of spaces available—not without shaking the very foundations of the Air Force. Firing 4,800 more Reservists serving on extended active duty to make room for a similar number of brand-new second lieutenants might cause every Reservist in the active force to being shopping for a civilian AFSC.

Yet these ROTC students were promised four years ago, that if selected for—and upon satisfactory completion of—the advanced course, they would be commissioned. Would there be a breach of faith if they didn't get their gold bars? It would appear illogical to think of these graduates in terms of Reserve requirements. What useful purpose would be served in graduating thousands of new second lieutenants in skills totally unrelated to the needs of the Air Force Reserve?

The Air Force thought about this question a long time. The one area where the Air Force can accommodate second lieutenants is in the flying training program. In the current graduating crop about 3,500 volunteered for pilot training without being asked.

The Air Force then decided to ask the others. It said it would commission and send through pilot training in grade all those who would volun-

**Don't come back . . . unless we call you.**

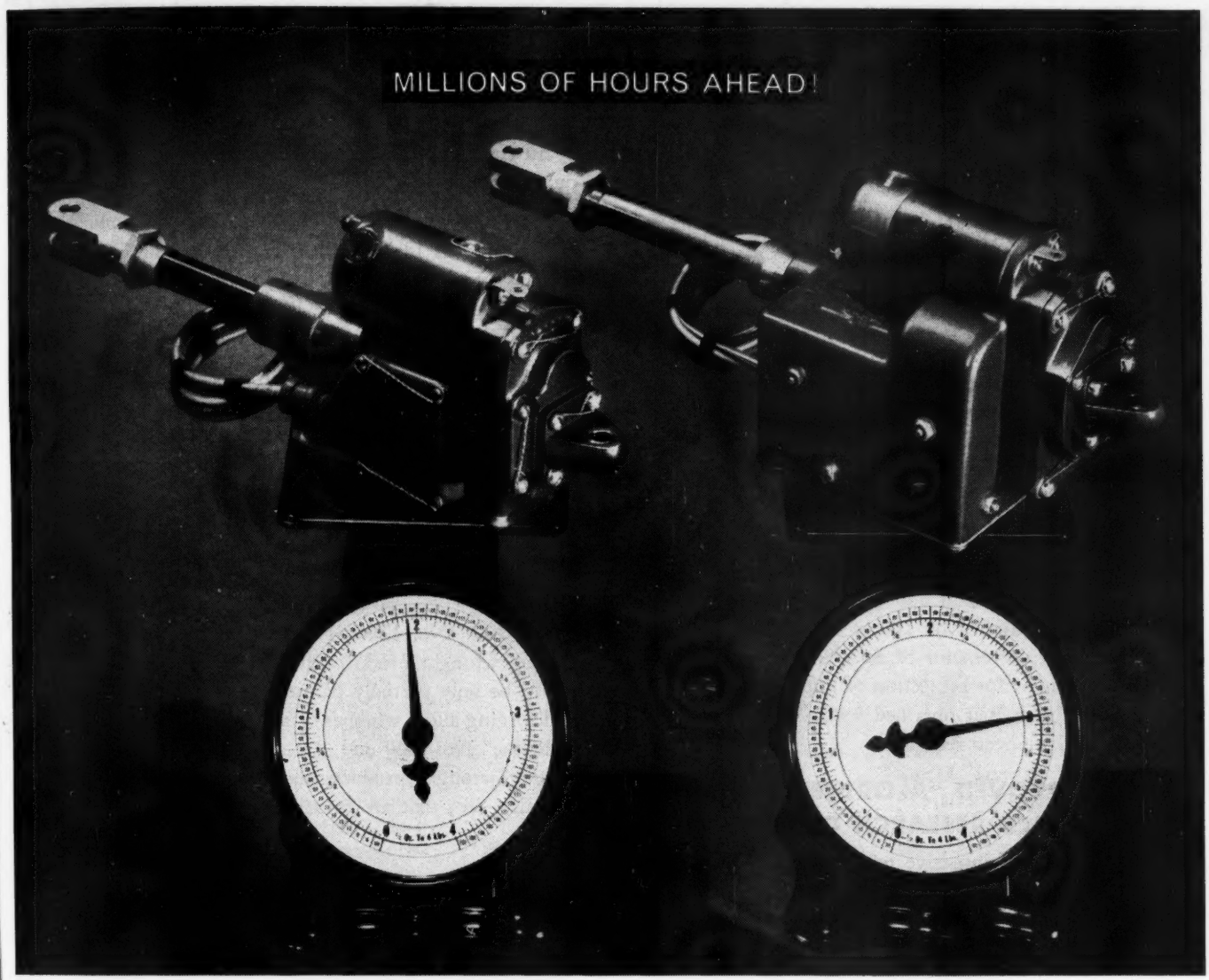
teer to fly. And it offered this alternative—all those who did not volunteer for pilot training would be given their choice of serving two years on active duty as airmen, at the end of which they would be commissioned or of taking their chances with the Selective Service.

When this alternative was announced, another 5,200 allowed as how they'd like to become pilots. This made a total of some 8,700 earmarked for the flying training program.

But the major problem centers around the 4,800 who must serve as airmen for twenty-four months or check in with their local draft boards. The Air Force realized that this was a Hobson's choice at best. Yet it appeared to be the best solution under difficult circumstances. Someone was bound to get hurt from the moment national policy, in the form of a Department of Defense edict on November 10, 1952, dictated that the ROTC students must serve on active duty. Public opinion was the driving force in this mandate.

The easy solution would have been to commission the graduates and let them enroll in the Reserve—even if their skills were not needed. But General Hershey convinced the

*(Continued on page 57)*




**ANOTHER SIGNIFICANT ADVANCE IN**

# the battle against weight and space!

**New, small AiResearch actuator weighs 35% less than old style ... retains its *high efficiency!*** When it comes to equipping a modern jet fighter plane, the saving of an inch of space, or even 17 ounces is *news!*

That's why AiResearch engineers are proud of this new component: a slim, compact linear actuator suitable for thin wing fighter installation. It weighs 35% less than former actuators, with no sacrifice in performance.

| New actuator — lighter, smaller: | *New Model* | *Old Model* |
|---|---|---|
| Length | 11.78 in. | 11.78 in. |
| Width (max.) | 1.80 in. | 3.10 in. |
| Height (max.) | 3.73 in. | 4.49 in. |
| Weight | 31 oz. | 48 oz. |
| Operating load (normal) | 500 lbs. | 500 lbs. |

During more than a decade of leadership AiResearch has compiled over 700,000 research and development hours in this field alone and produced 419,773 actuating units.

These new actuators are another example of how AiResearch achieves ever greater performance from smaller size and weight at lower cost. If you have a problem in any of the fields listed below, consult our engineering-manufacturing team.

## AiResearch Manufacturing Company

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*Designer and manufacturer of aircraft equipment in these major categories*

# NEW PROTECTIVE COATING CHEMICAL FOR ALUMINUM

## ALODIZING

Alodizing with "Alodine,"* a new technique in the protective coating of aluminum, was made available for production-scale use in 1946. Since that time Alodizing has largely supplanted the more elaborate, costly and time-consuming anodic treatments in the aircraft and other industries.

Continuous and successful industrial use has clearly demonstrated the simplicity and economy of the Alodizing process as well as the effectiveness of the "Alodine" amorphous coatings, particularly as a base for paint. In fact, the paint-bond that Alodized aluminum provides has been found to be superior to that possible with chromic acid anodizing.

The corrosion-resistance of unpainted aluminum Alodized with "Alodine" Nos. 100 or 300 is excellent, easily meeting the requirements of Specification MIL-C-5541. However, a need for protection of unpainted aluminum, even better than that obtained with chromic acid anodizing, has long been recognized.

## NEW IMPROVED "ALODINE" DEVELOPED By ACP RESEARCH CHEMISTS

Several years of intensive research have now led to a new type of "Alodine," designated as "Alodine" No. 1200. This new protective coating chemical forms an amorphous mixed metallic oxide coating of low dielectric resistance that provides unusually high corrosion-resistance for unpainted aluminum. In addition, it forms an excellent paint bond that approaches closely the high quality obtained with the earlier types of "Alodine."

After having been tested for conformance with Specification MIL-C-5541, "Alodine" No. 1200 is now about to go into production.

## PROCESS DETAILS

"Alodine" No. 1200 is the only essential chemical needed to prepare the coating bath and the final rinse bath. One of its unique features is that it can be used in tanks in an immersion process, or, in a multi-stage power washer in a spray process, or, with a slight adjustment of pH, with brush or portable spray equipment in a manual process. This means that even where the simple production equipment is not available, or where touching up of damaged coatings previously Alodized or anodized is required, excellent protection and paint bonding can still be obtained with practically no equipment.

All three methods of application easily meet the requirements of Specification MIL-C-5541.

Process sequence for all three methods of application is the same as for other standard grades of "Alodine" such as Nos. 100, 300, and 600, viz.: 1. Pre-cleaning. 2. Rinsing. 3. Alodizing. 4. Rinsing. 5. Acidulated rinsing. 6. Drying.

Coating time in an immersion process ranges from 2 to 8 minutes and in a mechanized spray process is about 30 seconds. "Alodine" No. 1200 baths are operated at room temperatures (70° to 100°F.) and heating is required only if the bath has gotten cold after a "down" period.

## RECOMMENDED USES FOR "ALODINE" No. 1200

"Alodine" No. 1200 is specifically recommended for coating wrought products that are not to be painted or are to be only partially painted; and for coating casting and forging alloys whether or not these are to be painted. "Alodine" Nos. 100 and 300 are still recommended for coating wrought products such as venetian blind slats, awnings, etc., that are invariably painted.

### RESULTS OF TENSILE TESTS

This new "Alodine" not only retards visible corrosion and pitting, but as shown in the table below, the loss of ductility with "Alodine" No. 1200, both brush and dip after 1000 hours salt spray was less than for chromic acid anodizing after 250 hours, and for "Alodine" No. 100 and a conventional chromate treatment after 168 hours exposure

| PROCESS | SALT SPRAY EXPOSURE | COMPLIANCE WITH TENSILE REQUIREMENTS OF MIL-C-5541 |
|---|---|---|
| CHROMIC ACID ANODIZING | 168 hrs. | passes |
| | 250 hrs. | passes |
| | 500 hrs. | fails |
| | 1000 hrs. | fails |
| BRUSH "ALODINE" No. 1200 | 168 hrs. | passes |
| | 250 hrs. | passes |
| | 500 hrs. | passes |
| | 1000 hrs. | passes |
| DIP "ALODINE" No. 1200 | 168 hrs. | passes |
| | 250 hrs. | passes |
| | 500 hrs. | passes |
| | 1000 hrs. | passes |
| DIP "ALODINE" No. 100 | 168 hrs. | passes |
| | 250 hrs. | fails |
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Defense Department that public opinion would not hold still for continued deferment of a group which had been exempted from the draft four years—at the very time when it was necessary to call up almost 200,000 Reservists and Guardsmen. And in the same period, other thousands of young men of similar age and physical profile had been inducted into the Infantry.

Faced with the proposition that the graduates must serve on active duty, the Air Force came up with the 24-month enlisted idea. But it promised these lads that they would have first crack at OCS and direct commissions as they open up during the two-year hitch.

The majority of these 4,800 ROTC chaps are less than impressed with this solution and recently have been making loud noises in the direction of their Congressmen. A contract, they say, is a contract, and the Air Force should honor it by giving them commissions and calling them to duty as officers—not as airmen. And airmen third class, if you please.

But, here again, you can conclude that this undesirable situation facing the ROTC graduates is directly related to the roller-coaster ride our principal airpower agency has been given.

It is logical to assume that had the Air Force been permitted to build up evenly to 143 wings there would

**Airman Third Class, yet!**

have been spaces for these 4,800 young men. Now the Air Force fears that, if they are commissioned and brought on active duty in non-flying, administrative jobs, the 5,200 who "volunteered" for pilot training on second thought, will change their minds again—in the direction of non-flying, administrative slots. Such action, the Air Force realizes, would cripple the pilot training program. But how could this group be frozen? Would it not be a serious breach of faith to create 4,800 administrative positions and bar from these more than 5,000 who were not eager to become pilots in the first place?

These are no series of isolated problems, each unrelated to the other. All are part of what devotees of the cliché pontifically refer to as the "big picture." Include in this the problem of B-36 lead crews.

It takes at least sixteen of the most highly-trained and highly-skilled men

**Not enough seats for everybody.**

in the Air Force to become a B-36 crew. Yet the B-52 requires nowhere near this number. The pilot who is also navigator and bombardier will make the need for these latter two individuals grow progressively smaller. What happens to these specialists, or to the flight engineer who won't be needed to operate a panel? Can they be re-trained in specialties the Air Force will need or must they be cut adrift?

It is an interesting thesis and one which B-36 lead crews themselves ponder. They have no contracts and one wonders whether the Air Force will offer contracts to bombardiers and scanners whose useful longevity is difficult to determine.

Surely, someone will say, there is a place for these proficient individuals in the Reserve. And others will argue that the Air Force has no problem with 4,800 ROTC graduates who face the prospect of two years with one inverted stripe. Take 'em in the Reserve, they'll say. After all, a lot of guys in the Reserve have a few years on them and the Reserve can use new blood.

On the surface such conclusions appear valid. But validity requires more than mere surface examination. It requires examination of the structure of airpower in the whole, placing each facet in proper perspective and proper relationship to the entity.

It is fair to question whether this has been done—or is contemplated. And it is fair to question whether the new, long-range Reserve program, soon to be announced, began at the beginning—at the Air Force-in-being.

It may have. The Air Force may have stolen a march on the other services in proposing a practical Reserve program. Else, how can you explain the start last month of the program to combine the features of Volunteer and Specialized Training into the new Air Reserve Centers?

But fifty Centers throughout the United States, operating at full capacity, with every Reservist eligible enrolled in training, will not necessarily guarantee that there no longer will be Reserve problems. It is conceivable, for example, that Air Force will want a small, compact Reserve, limited in number to those who have skills that will be needed right now, on M-Day. In which event, what happens to the man whose skill is not needed but who desires to continue to participate for purposes of retirement, or promotion, or prestige, or whatever?

Will he be riffed as 6,000 were from the active Air Force a year ago? If so, will there not be a breach of contract even greater than 4,000-plus ROTC graduates believe happened to them?

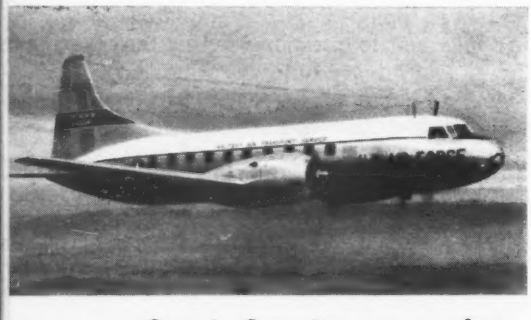
What kind of a Reserve can the nation have—and afford? Will it be an M-Day Reserve or an M-plus-something Day Reserve? Certainly, Reservists will not look kindly upon any program that makes them liable for recall another seven years after they have quit being throttle jockeys. And the Air Guard hopes for a better fate than becoming another brush fire department and mammoth replacement pool.

It is perhaps just as well that, unlike the dandelions, another long-range Reserve program has not thus far emerged this springtime. There are too many answers to too many questions still to be learned.

And there still is a need to get back to the root of all the problems, to the fundamental issue of the Air Force-in-being.

When the Air Force is permitted to get off the roller-coaster, it should be no trick to create the kind of Reserve posture the nation needs—and the thinking Reservist wants it to have.—END

# TECH TALK



**Convair Samaritan mercy plane.**

No one argues the practicality of evacuating military patients by air. Korea showed why. Only two of every 100 fighting men injured there died of their wounds, against 4½ in World War II, eight in World War I. To make a good thing even better, MATS—whose planes brought back some 67,000 patients from Korea—has added the **Convair C-131A Samaritan** to its domestic mercy fleet. The C-131A, a version of the commercial 340 transport, has rearward-facing seats for thirty-seven patients, or litters for twenty-seven, or various combinations of seats and litters.

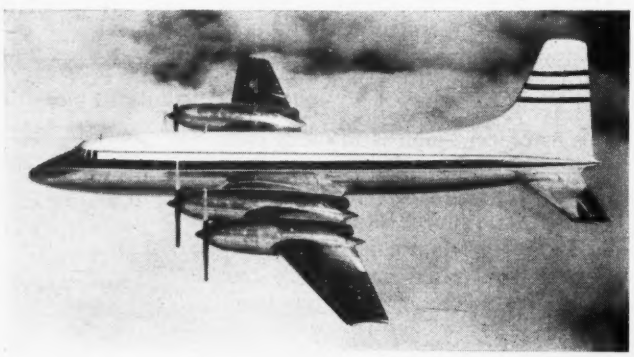
**Straight-up** seems to be a new look for Navy aircraft. After their unconventional take-off, the two vertical-rising planes—**Lockheed's XFV-1** and **Convair's XFY-1**—are designed to level off for normal-flight, at speeds approximating 500 mph, and then land by "backing" straight down, using their X-shaped tails for landing gear. In theory, this permits operations from a tennis-court-sized plot of ground or even from shipboard, instead of from the thousands of feet of runway many modern fighters require. It also means that in an age when seconds are priceless in air defense planning the VTO fighters reach altitude—and possible interception with enemy bombers—ahead of conventional fighters. **Curtiss** dual-rotating Turboelectric props are used on both new fighters. (For Russian progress in this field, see AIR FORCE, February '53.)

Three AF high-speed research planes have been turned out to pasture. Two are **Northrop X-4s,** one of which will go to the Air University for display. The other goes to the AF Technical Museum at Wright-Patterson AFB, as does the delta-winged **XF-92A** that paved the way for Convair's supersonic interceptor, the F-102.

Slated for production in Canada is the sleek British transport, **Bristol's Britannia.** Details of the maritime reconnaissance version which Canadair, Ltd., of Montreal, will build are classified. **BOAC** has ordered thirty of the commercial models, powered by four Bristol Proteus 755 turboprops.

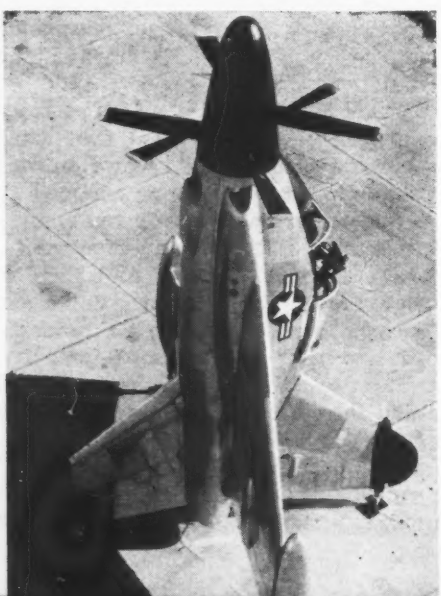
"Package" atomic power plants for AF bases in the remote Arctic may be in the offing. The Atomic Energy Commission, at the Defense Department's request, has asked for bids from private firms on such **small nuclear power plants.** They would be of great value in areas like Alaska and Thule, in northwestern Greenland, where fuel for heat and power is a major problem.

On paper, at least, few areas of the world are safe from the camera eye of Republic's new **RF-84F Thunderflash,** a photo-recon version of the well-known F-84 series. Now entering volume production with its fighter-bomber twin, the sweptwing F-84F, the Thunderflash can be toted in the belly of an RB-36, launched for the photo mission, then recovered by the mother plane. The RF-84F's range is about 2,000 miles. Air-intake ducts are in the RF-84F's wing roots so aerial cameras and electronic gear can be housed in the nose. Powered by a Wright J-65 Sapphire turbojet, the Thunderflash mounts four .50 caliber guns.



**Britannia.**

**Left, below, Lockheed XFV-1; right, Convair XFY-1.**



**Business end of Republic's RF-84F Thunderflash.**

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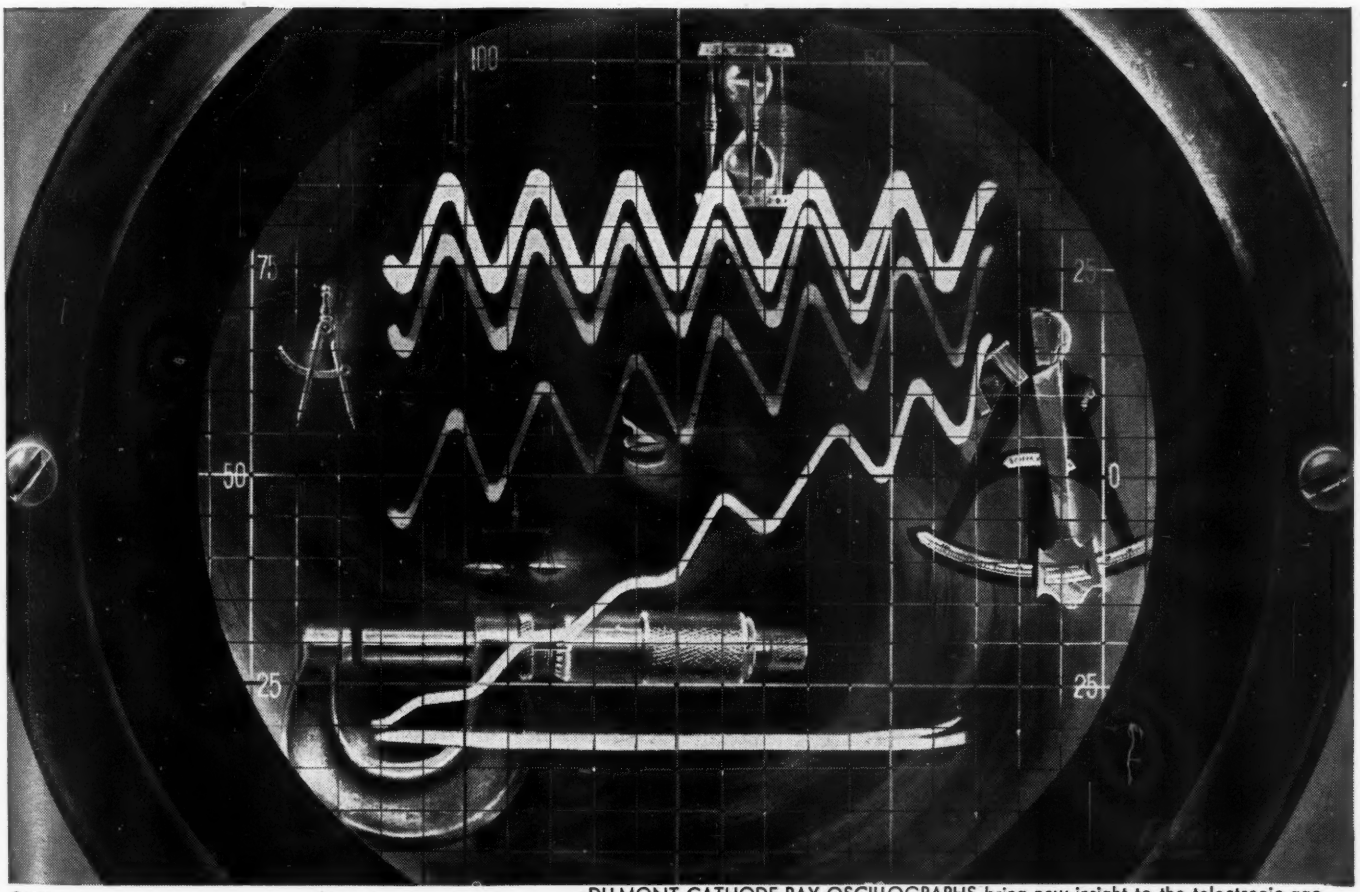


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## Air Research

# NATO BRAIN BANK

***How the free nations, by pooling their knowledge, contribute to their own security and progress***

**By Dr. Theodore von Karman**

**Dr. von Karman, above, aptly called today's "Dean of Aeronautical Scientists," has headed the USAF's Scientific Advisory Board for ten years.**

SCIENTIFIC research has always been a cooperative activity. In happier times this cooperation was unrestricted and included all interested nations. Present world conditions make it imperative that we restrict cooperation in research and development to friendly nations. Since the nations united by the North Atlantic Treaty Organization combine their forces for the defense of the Free World, it appears natural that the research and development activities required for such defense should also be considered as a cooperative effort. Recognition of this concept led to the establishment in May 1952 of the Advisory Group for Aeronautical Research and Development (AGARD) to NATO. Upon the recommendation of Gen. Hoyt S. Vandenberg, the Air Force was designated as executive agent for the organization and consequently has provided administrative and logistic support during the initial period of Advisory Group operation.

The importance of promoting international cooperation is evident if we pause to reflect upon the character of aeronautical research and development. Aviation has long ceased to be a narrow specialty. At the present time chemists, metallurgists, physicists, and even physicians work side-by-side with aeronautical engineers to solve the problems involved in transonic and supersonic flight. No country can hope to attain unchallenged technical superiority in all of these fields. By pooling and exchanging the fruits of their individual efforts, each nation can contribute to the collective strength and progress of all.

This is particularly true in the area of fundamental or basic research. In the United States the importance of basic knowledge and fundamental research to technological progress was recognized somewhat later than in some European countries. This was partially due to the more abundant resources of this country. American industry was less attentive to potential savings in materiel or fuel than countries which had had to be frugal. The European countries had more incentive to carry out research to realize such savings. Also the scientific tradition was firmly rooted in many European countries for centuries by the time American scientific life started to blossom. Even at the time the Wright Brothers, by reason of their perseverance and practical skill, succeeded in realizing the first powered flight before all their competitors, basic aeronautical science was more advanced in Europe than in the United States.

It is true that American scientists have made important strides in the field of basic fluid mechanics and aerodynamics in the last decades. Nevertheless, though the American aircraft industry was leading in the development of aircraft in many fields, for example, commercial air transportation, we were somewhat late in the introduction of jet propulsion and in the application of the principle of the sweptback wing. Both these discoveries were quite important in piercing the sonic barrier. As a matter of fact, in August of 1939 the Germans flew a Heinkel-178 powered by a turbojet. In May of 1941, the British flew a Gloster airplane with jet power. Our first airplane powered by jet did not fly until October 2, 1942, and the power plant we used was a copy of a British jet engine. The impetus to the use of the sweptback wing stems from a series of German reports and experiments on the subject which became available following victory in Europe. While there was work in progress in the United States on the development of the jet engine and the sweptback wing, this work was less advanced than that done abroad.

*(Continued on page 63)*

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The only conclusion which I want to draw from the above considerations is that a cooperative effort in aeronautical research between this country and the other NATO nations is mutually advantageous and not a one-way, give-away program.

Of the eleven NATO nations participating in the Advisory Group only Canada, the United Kingdom, and the United States made significant advances in aeronautical research during the second World War. France, Italy, Holland, and Belgium were forced to "mark time" due to occupation and even lost ground due to the destruction of research facilities. Most of these countries have made a remarkable comeback. Prior to the war, Denmark, Norway, Greece, and Turkey made modest contributions to aeronautical research but now they badly need advice and access to the accumulated knowledge of the past few years. For modest expenditure we have the opportunity to help these nations create an atmosphere favorable for scientific research, *i.e.*, favorable for the development of the scientific talent which exists in every country. We can also prevent wasteful duplication of effort and free the energies of our allies for more productive undertakings. This is the reason why the United States Air Force was enthusiastic about the inception of the Advisory Group and why it actively furthered its aims.

How does the Advisory Group operate? Mainly by—

- Holding periodic meetings which unite the leading scientific representatives of the NATO nations. These meetings foster a full and free exchange of research and development information for the mutual benefit of all NATO participants.
- Conducting seminars and special colloquia on various subjects.
- Publishing monographs (so-called AGARDographs) on specific subjects, where the material, although unclassified, is not easily accessible or has never been collected in usable form.
- Promoting exchange of instrumentation, standardization of techniques and joint use of facilities.

Dr. Hugh L. Dryden, Director of the NACA, and I are the United States members of the Advisory Group. We are ably supported by almost a score of distinguished United States Panel members who are affiliated with the Air Force, Navy, National Advisory Committee for Aeronautics, educational institutions, and private concerns. In addition, United States scientists are employed as consultants to the Advisory Group, and recognized specialists are invited to attend meetings and contribute to technical discussions as informed observers representing the United States.

In view of the increasingly broad scope of aeronautical sciences, the national delegates decided to concentrate initially on five aspects of aeronautical research and thus avoid dissipating the energies of the Advisory Group. I should like to discuss each of these briefly and review some of the accomplishments to date.

We have chosen one field of basic research which traditionally is not considered an aeronautical science, namely, the science of combustion. There were many reasons for this choice. We felt that the question of combustion in the piston engine was a well defined problem of fuel chemistry. In the jet engine, however, aerodynamics and chemistry cannot be separated. Therefore, we thought it would be advantageous to bring together physical chemists, thermodynamicists and aerodynamicists and induce them to mutually re-examine their methods. I can say with satisfaction that this task was fulfilled with more success than we had hoped. Inspired by the Advisory Group meeting, a number of research projects have been initiated. For example, both Belgium and the Netherlands now have active combustion programs which are being carried out at their respective national aeronautical research laboratories. A leading research administrator of the Netherlands attributes the work in his country to the stimulus provided by the combustion panel of the Advisory Group. Of equal importance is the exchange of information between scientists and engineers trained in different scientific disciplines which the Advisory Group has fostered.

A second field which the Advisory Group has pursued is that of flight testing. The flight test panel is sponsoring the preparation of a monograph on common standards and methods for flight testing of military aircraft. No such fundamental document has existed to date although its need has long been recognized by military technicians. This monograph will combine the best experience of the NATO members and provide a common procedure for the measurement and evaluation of performance, stability, control, and other pertinent flight characteristics of aircraft. The authors are recognized authorities in this country, France, Holland, and Great Britain.

An international panel was also formed for wind tunnel design and techniques. This panel is confronted with the task of promoting the joint use of facilities and disseminating knowledge concerning methods of design of wind tunnels. As in the case of flight testing not much literature is available. Therefore, experts on the design and use of wind tunnels have worked with the Advisory Group in collecting valuable material and putting it in a suitable form.

The United States has provided foreign participants with substantial amounts of technical advice relative to the

*(Continued on following page)*

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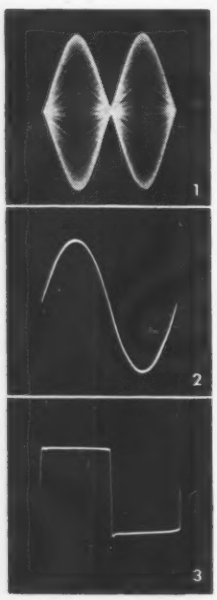

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## AIR RESEARCH — CONTINUED

operation and construction of intermittent wind tunnels. The intermittent wind tunnel is cheaper to build and operate than the continuous circuit wind tunnel and, thus, is exceedingly well adapted to the research resources of the NATO community.

The British provided a Viking aircraft to transport wind tunnel experts to Amsterdam, Brussels, Paris, and Rome. These experts conferred with scientists at the local research establishments, and assisted them in resolving their technical problems. There has been a very favorable reaction from the NATO countries which were visited and they were unanimous in their view that worthwhile advice was received. These meetings on the working level have tended to promote working relationships between scientists of different countries confronted with similar problems and have accordingly facilitated the exchange of technical data and ideas.

Another field for which there is an international panel is aeromedicine. One of the aims of this panel is to standardize the selection and indoctrination of aircrew personnel throughout the NATO community. Through the Advisory Group the latest information on protective equipment for personnel and flying safety has been made available to NATO countries. In the furtherance of this objective, the panel publishes a twice-monthly report on aeromedical research projects which supplements the panel meetings in the dissemination of information. Since high performance aircraft are being delivered to NATO countries, it is increasingly important that the indoctrination of personnel keep abreast of the equipment. The interest which the Advisory Group has stimulated in flying safety will save both lives and dollars.

Finally, the Advisory Group works on common problems of documentation and has a vigorous program in progress concerning the standardization of methods for cataloging, abstracting and distributing aeronautical literature. A substantial effort is being directed towards investigating the merits of various retrieval systems designed to promote accessibility of technical information. Improvement in this area can effect important savings because both time and money are lost when information is not readily available due to inefficient coding systems. Those who have much to do with aeronautical literature will appreciate the fact that the British have agreed in the documentation committee to abandon the preparation of their reports on legal size paper and adopt the standard size almost universally used.

The three General Assemblies of the Advisory Group up to the present have been held in Paris, Rome, and London. The London meeting was followed by a seminar jointly sponsored by AGARD and the University of Rome. The American scientists participating in this seminar were enthusiastically received in Rome and long, fruitful discussions followed their lectures. It is intended to hold such seminars in a number of capitals of the NATO nations.

In an address to the Third General Assembly to the Advisory Group held in London in September of 1953, Lt. Gen. Laurence C. Craigie, then USAF Deputy Chief of Staff for Development, stated: "AGARD is an organization with a tremendous growth potential and a great capacity for making a significant contribution to the defense of the NATO community." This view is shared by the USAF Chief of Staff, Gen. Nathan F. Twining, and the Assistant Secretary of Defense for Research and Development, Mr. Donald A. Quarles. The returns from the Advisory Group have been well worth the investment. Especially is this true when we consider that the annual operating budget is less than the price of one fighter airplane.—END

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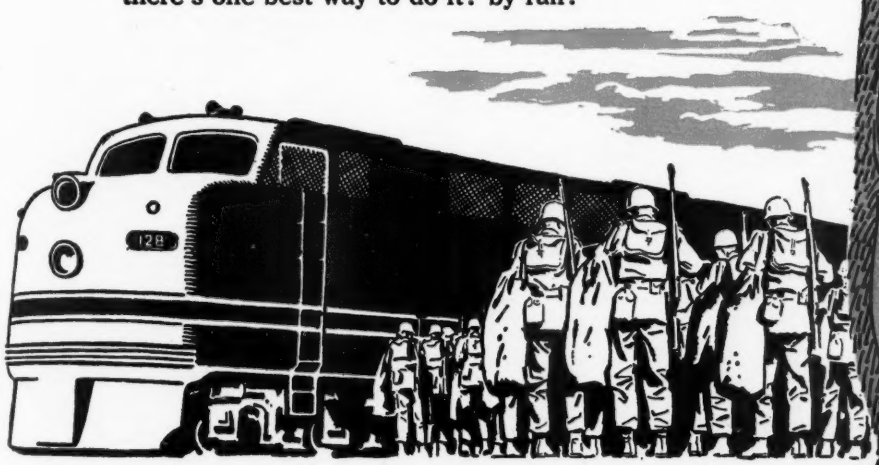

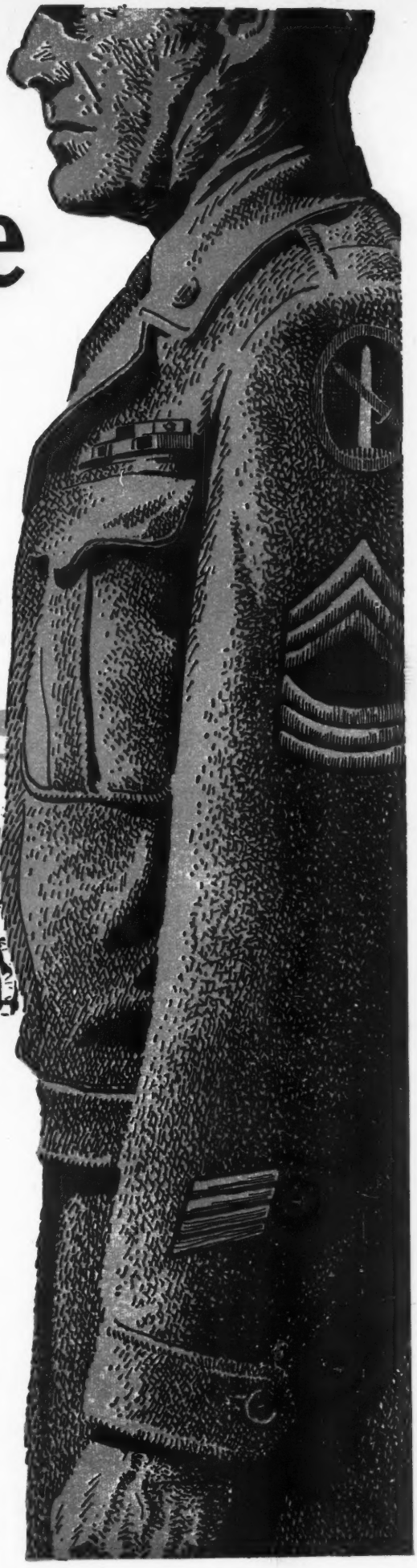

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# AFA AND THE FREEDOM AWARDS

***Randall Leopold represents AFA on the jury to select the winners of the Freedoms Foundation's annual awards for '53***

On Washington's Birthday, AFA Regional Vice President **Randall Leopold** served as one of the thirty-two members of the 1953 National Awards Jury of the **Freedoms Foundation.** The panel, which included thirteen State Supreme Court justices, and representatives of patriotic, veterans, and service club organizations, selected the winners of the Foundation's annual awards. The three-day gathering was at Valley Forge, Penna.

**Before addressing St. Louis Squadron meeting, Gill Robb Wilson, left, is greeted by V-P Chet Stewart and ARTC's Lt. Gen. Robert Harper.**

The Foundation, established in 1949 to encourage an understanding of the spirit and philosophy of the American form of government, announced more than 1,000 award winners. Dr. Milton S. Eisenhower, president of Pennsylvania State University, presented the principal national and school awards.

Leopold, on behalf of the Air Force Association, presented the Foundation with an American flag to be flown at its headquarters at Valley Forge. The flag was accepted by Mrs. J. Howard Pew, director of Freedoms Foundation.

In presenting the flag, Leopold said, "The more than three million veterans of World War II, the Korean conflict, and many members now on active duty all over the world salute and congratulate the Freedoms Foundation on its accomplishments. We have fought to preserve our American way of life and our heritage. The Freedoms Foundation also has performed an equally important task in instilling into the hearts and minds of our citizens and youth the desire and necessity of safeguarding that freedom.

"Today, on the sacred soil of Valley Forge, the Air Force Association proudly presents to the Freedoms Foundation the flag of our country to be flown over the Foundation the coming year, and we sincerely believe the mission you are carrying on here will help insure the flying of many, many American flags for countless generations over a brave and free United States."

**Leopold presents flag to Freedoms Foundation's Mrs. Pew. In background are Don Belding and Dr. Milton Eisenhower. The gentleman at the far left is unidentified.**

April 18 marked the twelfth anniversary of the carrier-based B-25 raid on Tokyo, led by **Jimmy Doolittle.** Of the eighty men who took part in this first strike at the Japanese homeland, sixty are alive today—thirty-six of them still on active duty with the Air Force. The Doolittle **Raiders,** who hold a reunion each year on the anniversary date, last year were guests of AFA's **California Wing,** in San Diego.

**The Tokyo Raiders, Doolittle's B-25 crews who bombed Tokyo in April 1942, turned out in force at their '53 convention as guests of AFA's California Wing Convention, in San Diego. Doolittle himself, second from left in the front row, led the reunion. This year the group met in Galveston, Texas.**

This year's gathering was in Galveston, Tex., April 16-18. There the Raiders, meeting in the Galvez Hotel, were honored by Mayor Herbert Cartwright and the citizens of Galveston.

Reunion chairman was Col. John A. Hilger, from USAF Headquarters, and Mr. Doolittle himself led the list of advance registrants.

An interesting sidelight is the fact that, of the twenty Raiders killed in and since the 1942 raid, not one has died of natural causes. Seven died in Japanese prison camps or as a result of imprisonment. The others were shot down in subsequent enemy action or lost their lives in aircraft accidents.

One of the Raiders. **Jacob DeShazer,**

*(Continued on following page)*

## SQUADRON OF THE MONTH

**St. Louis, Mo., Squadron**

**CITED FOR**

**membership procurement. For the fifth consecutive month, the Squadron has obtained more memberships for Air Force Association than any other AFA unit. The Association salutes this vigorous program.**

who in 1942 was a corporal, spent thirty-four months in solitary confinement in various prison camps. On his return to the US, he entered a theological seminary, and later went back to Japan as a Free Methodist missionary. Today he operates a mission on the outskirts of Osaka.

AFA Squadrons in **Metropolitan New York**, following a plan suggested by New York Wing Commander David Levison, have held the first of a series of three monthly combined dinner-meetings. On March 11 the New York City (WAC) Squadron was host to the other area units at the Wings Club in the Biltmore Hotel. More than 100 members heard the principal speaker, Fred Glass of the New York Port Authority. Among those present were T. F. Walkowicz, a National Director, and National Secretary Julian B. Rosenthal. Other New York Squadrons will act as sponsor and host for the next meetings.

**At Santa Monica installation, from left, old Cmdr. Joseph Myers, new Cmdr. James Czach, Pauline Vetensky, Regional V-P James McDivitt.**

Randall Leopold, Northeast Regional Vice President, officiated at two Squadron officer installations during March. In one, Styron J. Reichenbach, 319 Shaw Ave., Lewiston, Penna., was installed Commander of the **Mifflin County Squadron.** Other officers are Robert Nale, Edward Hobert, and Paul Foss. Councilmen are Clair McMahon, George Speece, and Max Fleming.

James J. Gilboy, 498 Kent Road, Springfield, Penna., is the new Commander of the **Metropolitan Philadelphia Squadron.** Cavanaugh's, the Squadron's regular meeting place, was the scene of a dual installation dinner, since the new **Philadelphia Auxiliary** officers also took office. Auxiliary President is Bernice Stieber. Retiring Squadron Commander Elizabeth McKenzie was program chairman.

Paul M. Fisher, new Utah Wing Commander, announces that new Squadrons are being formed in **Ogden and Salt Lake City.** Applications for Charter for both are expected shortly.

Since taking office in February, Fisher has held several organizational meetings and has appointed Group Commanders for the northern, central, and southern sections of the state. The respective Commanders are William Farmer, Ogden; George Holbrook, Centerville; and Gordon Dyer, Bountiful. At present, the Ute Squadron is the only active unit in the state.

The **Worcester, Mass., Squadron,** at its March meeting, invited the public to a showing of the motion picture, "One Bomb—One City," which details a mock bombing raid on New York City by bombers of the Strategic Air Command. Edward R. Murrow, 1953 winner of AFA's Arts and Letters Award, narrated the film.

Wayne Gibbs, Squadron Commander, introduced the two speakers of the evening, Ground Observer Corps Director Bert Cuthbert, and Maj. Franklin G. Woodward, Air Force coordinator to Massachusetts for the GOC program.

At a recent meeting in Washington, officers of the **AFA's Medical Division** met with Headquarters staff members to plan future operations of the Division. Dr. Richard Meiling, Commander of the Division; Dr. Cortez F. Enloe, Jr., Division representative on the Board of Directors; and Dr. Charles Campbell were present.

Dr. Meiling announced that the Division plans a reunion of all Air Force Medics during AFA's 1954 National Convention in Omaha, August 19-22. Details of the reunion may be obtained from Dr. Meiling at University Hospitals, Ohio State University, Columbus, Ohio.

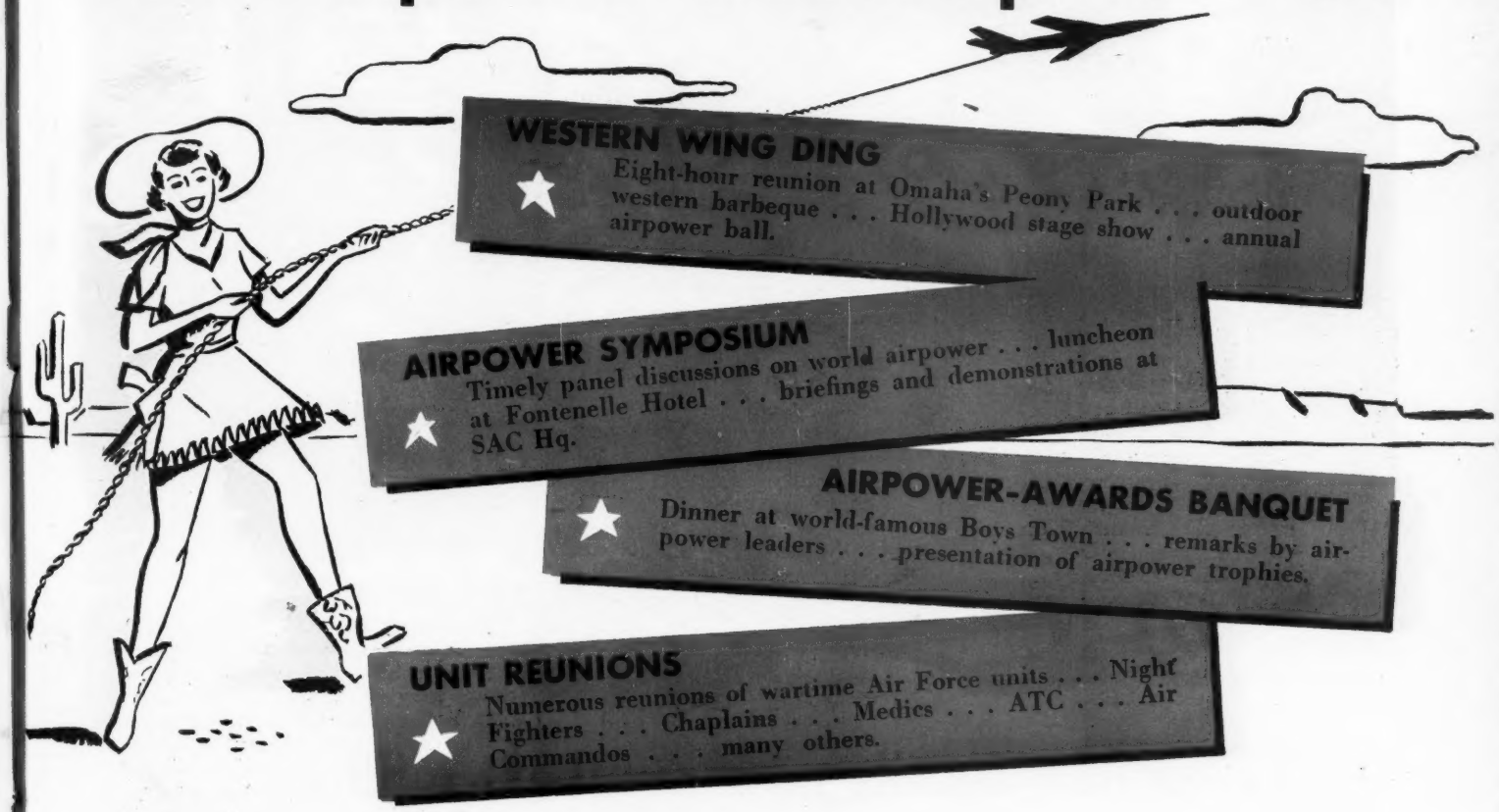
The **Illinois Wing's** fourth annual convention, scheduled for June 6 at the Sheraton Hotel in Chicago, will get underway with a 9:00 a.m. registration. A business session is to follow at 9:30. **AFA President George C. Kenney** will be the guest speaker at the Airpower

*(Continued on page 71)*

**Milwaukee's Billy Mitchell Squadron names Jimmy Stewart an Honorary Commander, for life. From left are Bernard Schmidt, John Kleczka, May Jane Rosenqvist, Sqdn. Cmdr. Leonard Dereszvnski, Al Meskis who accepted for Stewart, Stanley Wagenknecht, and Fran Hyland.**

**Regional vice president George Anderl, second from right in the front row, presents Charter to the new Flint, Mich., Squadron. Looking on, from left, are Bill Sharpe, Bob Emerson, Al Maule, Squadron Commander Roy Kanaby, Ed Jakeway, Edythe Aldrich, Ray Percival, and Harold Nance.**

# AFA Airpower Roundup for '54


WESTERN WING DING
Eight-hour reunion at Omaha's Peony Park . . . outdoor western barbeque . . . Hollywood stage show . . . annual airpower ball.
AIRPOWER SYMPOSIUM
Timely panel discussions on world airpower . . . luncheon at Fontenelle Hotel . . . briefings and demonstrations at SAC Hq.
AIRPOWER-AWARDS BANQUET
Dinner at world-famous Boys Town . . . remarks by airpower leaders . . . presentation of airpower trophies.
UNIT REUNIONS
Numerous reunions of wartime Air Force units . . . Night Fighters . . . Chaplains . . . Medics . . . ATC . . . Air Commandos . . . many others.

## RESERVE YOUR ROOM NOW FOR AFA'S CONVENTION AND REUNION

### CONVENTION HEADQUARTERS—FONTENELLE HOTEL

Two headquarters hotels have been reserved for AFA's 1954 meeting in Omaha. The Fontenelle is Convention Headquarters, and the Paxton is AFA Ladies Auxiliary Headquarters. Convention delegates and visitors will stay at both, as neither is large enough to house the entire Convention. Send your room request to the hotel of your choice. State whether you want air conditioning.

### LADIES AUXILIARY HEADQUARTERS—PAXTON HOTEL

| Rates | Single Room | Double Room | Twin Room |
|---|---|---|---|
| Fontenelle | $5.50-10.00 | $9.00-12.50 | $10.50-14.00 |
| Suites: 1 Bed Rm.: 25.00-32.00 | | 2 Bed Rm.: | 36.50-43.50 |
| Paxton | 5.50-9.00 | 7.00-9.75 | 8.00-10.75 |
| Suites: 1 Bed Rm.: 16.00-17.00 | | 2 Bed Rm.: | 26.00-27.00 |

**AIR FORCE ASSOCIATION CONVENTION ROOM RESERVATION REQUEST FORM**
**August 19-20-21-22, 1954**

(Please Print)

NAME_____

ADDRESS_____

CITY_____ STATE_____

ARRIVAL DATE_____ HOUR_____

DEPARTURE DATE_____ HOUR_____

NAME OF PERSON(S) SHARING ROOM:

_____

_____

*Room available at rate nearest that requested will be assigned.

**MAIL DIRECTLY TO:**

Reservations Manager
(Name of hotel of first choice)
Omaha, Neb.

(Please list two choices of hotels)

CHOICE: HOTEL DESIRED

First_____

Second_____

TYPE ROOM DESIRED

☐ Single ☐ Double ☐ Twin

☐ Suite—Number of Bedrooms_____

Desired rate per day: $_____*

☐ Desire Air Conditioning

# Grandpa's family now numbers millions...

The contented old gentleman relaxed in his 1924 living room probably had little knowledge of the *technical* details which made his radio work. Much less did he realize that they were forerunners of the magical entertainment which his grandchildren would *see* and *hear* in the 1950's.

Things like totally shielded chassis construction, automatic volume controls, pre-selective tuning and built-in phonograph jacks—these were part of the original Stromberg-Carlson radio family and they have passed down to you, in today's living, a wonderful heritage of quality.

The five-dial radio receiver shown on the table in the illustration above was a very popular set in the 20's—even though you had to read a twenty-seven page instruction book before you could tune in Clara, Lu and Em! Quite a contrast with the 1954 *"Panoramic Vision"* 21-inch TV, where a mere flip of two dials brings you clear, distortionless, locked-in picture and sound—and eventually will provide the world's finest free entertainment for you in full color!

You who enjoy this Stromberg-Carlson television receiver today are profiting from the ingenuity of the engineers who developed the first Stromberg-Carlson radio—and never stopped searching for ways to improve it!

And you can be sure that no matter how this great family line increases, no matter what tomorrow's products will be called—or what they will *do*—they'll still show the keenest know-how in the whole world of Communications; and still be true to the family motto, "There is nothing finer than a Stromberg-Carlson."

There is nothing finer than a

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STROMBERG-CARLSON LEADS TOO IN:

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Office Intercom Equipment

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Sound and Public Address Systems

answer is: Get the large and/or expensive aircraft out of the Tornado Belt!

The old argument that certain states have less severe winters than others or more VFR flying days per year may be valid when applied to primary and basic training phases, but should not be pertinent to operational crews and aircraft. I had fewer icing problems during Alaskan winters than encountered in the ZI below the 37th parallel.

Of course, winter operations are generally hardier in Maine or Idaho than they are in Texas or Georgia, but the occasional bumping of a rock-filled cloud does not match the cost of eight C-119s clobbered at one throw.

Capt. R. H. Hodges, AFRes
Bridgeport, Conn.

## Only the Finest

Sure and it warms the cockles of me heart to read the squabbles starting between the observer and the pilot (re February issue). Now and be glory, I wonder if we will see two different types of recruiting posters, "Only the best can fly—be a pilot," and "Only the finest can direct—be an observer." Maybe it will finally reach a point, as it does with us grounders, when nice old ladies will ask the observers, "Sonny, what branch of the service are you in? You can't be in the Air Force as you aren't wearing *pilot* wings, and the color of your uniform is wrong for the Navy and Army."

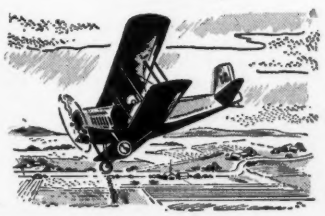
The policymakers of the Air Force took a big step forward lately when they laid down the thought that henceforth members of the different major commands should take more pride in being in the Air Force than being in, say, the Tactical Air Command or the Air Defense Command. Unit identification is fine, it undoubtedly helps create esprit de corps, but not when various commands take precedence over the Air Force. And speaking of esprit de corps, since when did anyone hear a Marine bragging that he was a scout, BAR gunner, or a basic rifleman, or that he was in the Second Marine Division or the Fifth Division? No—his proudest claim is "I'm a Marine!"

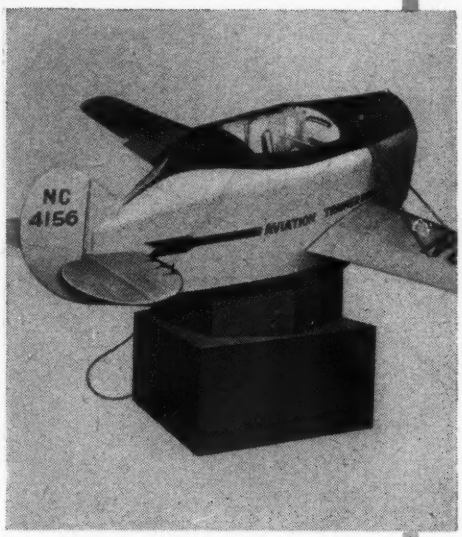
Isn't it about time that the Air Force and all its members take the same philosophy? We understand how vitally important it is to have a sufficient number of applicants for cadets, and we know that these men are truly outstanding. But—how about devoting some of the recruiting effort to proclaim "Only the finest can wear the Blue—Join the Air Force." Let's forget our internal differences of being Reserve or Regular, rated or non-rated, pilot or observer, and give out with the idea that teamwork is all-important, and that every member of the Air Force team (yes, even the garbage collector) belongs to the world's finest—THE UNITED STATES AIR FORCE.

1st Lt. Willis E. Lorey
New York, N. Y.


25
YEARS
OF SIMULATED FLIGHT

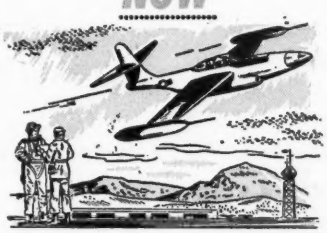
THEN

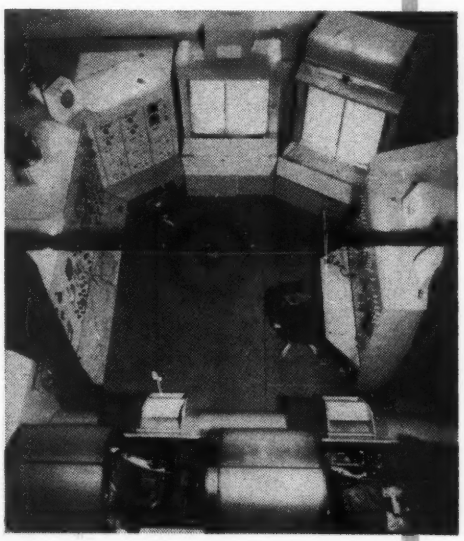





The Link Trainers of yesteryear pioneered the way for flight simulation on the ground. Their development and effective use in expediting the training of military and commercial airline pilots made "Link time" a requisite in each pilot's curriculum.

NOW





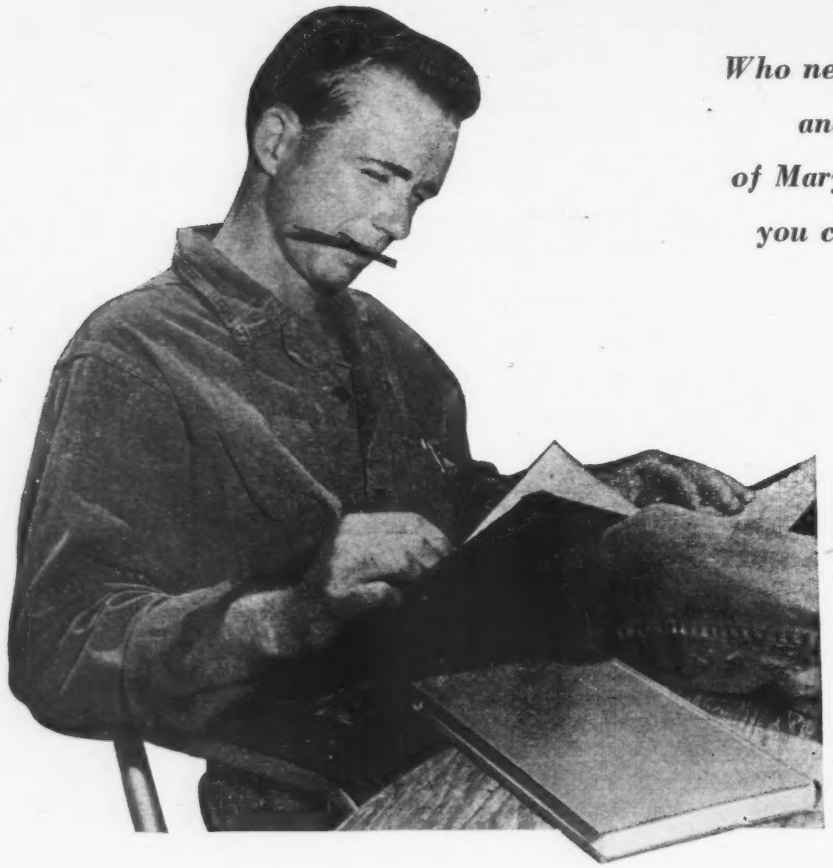
Modern flight training places even greater emphasis on simulated flight. New electronic jet simulators, such as Link's ultra-modern F-89D, right, now being delivered to the United States Air Force, reflect the Link company's continuing leadership in the flight simulator field.

AND YET TO COME . . .

*As the age of powered flight enters its third quarter of a century, and Link begins its second, the research laboratories of LINK are already at work to meet the military and commercial requirements of the fast-advancing Age of Flight.*

25 YEARS OF SIMULATED FLIGHT

LINK
AVIATION, INC.
BINGHAMTON, N. Y.



*Who needs halls of ivy, freshman week, and fraternity row? The University of Maryland's Overseas Program shows you can get an education without 'em*

# LARGEST CAMPUS IN THE WORLD

**By Lawrence P. Bachmann**

I THINK someone once said that you've got a university when you put the teacher on one end of the log and a pupil on the other.* Well, I've been sitting on one end of that log in Newfoundland, Labrador, Iceland, England, and Germany. And if I'm lucky maybe I'll sit there in Ethiopia," said Edward J. Miles, the youthful-looking instructor. "I left College Park, the US campus of the University of Maryland, in September 1952. I've been traveling and teaching ever since then, but I'm still on that same campus. At the moment I'm teaching economics on Monday and Wednesday nights at the 81st Fighter-Interceptor Wing at Bentwaters, in England. On Tuesday and Thursday nights I teach at Shepherd's Grove, another US Air Force installation. It's a two-hour drive between the bases through some beautiful English countryside.

"Sure I live out of my bag but I'm used to that. I've been living in BOQs ever since I started teaching in the University of Maryland's Overseas Program. When I got to Goose

*(Continued on page 75)*

*"Someone" was President James Garfield who in 1871 told Williams College alumni, "Give me a log hut, with only a simple bench, Mark Hopkins on one end and I on the other, and you may have all the buildings, apparatus, and libraries without him." Hopkins was president of Williams from 1836 to 1872.—The Editors.

# plant with a one-track mind...

Actually Twin Coach Aircraft Division is five plants—each devoted *exclusively* to aircraft production. We do no other work; we build no other products.

Here's why this is important. It means your airframe assemblies are built by experienced aircraft specialists . . . men who know no other standards than those of the aircraft industry.

So if you have an assembly you're thinking of subcontracting, call in Twin Coach Aircraft Division for consultation. You'll be secure in the knowledge that it's built by men who think like you . . . *men whose one thought is to produce to specification and on schedule.*

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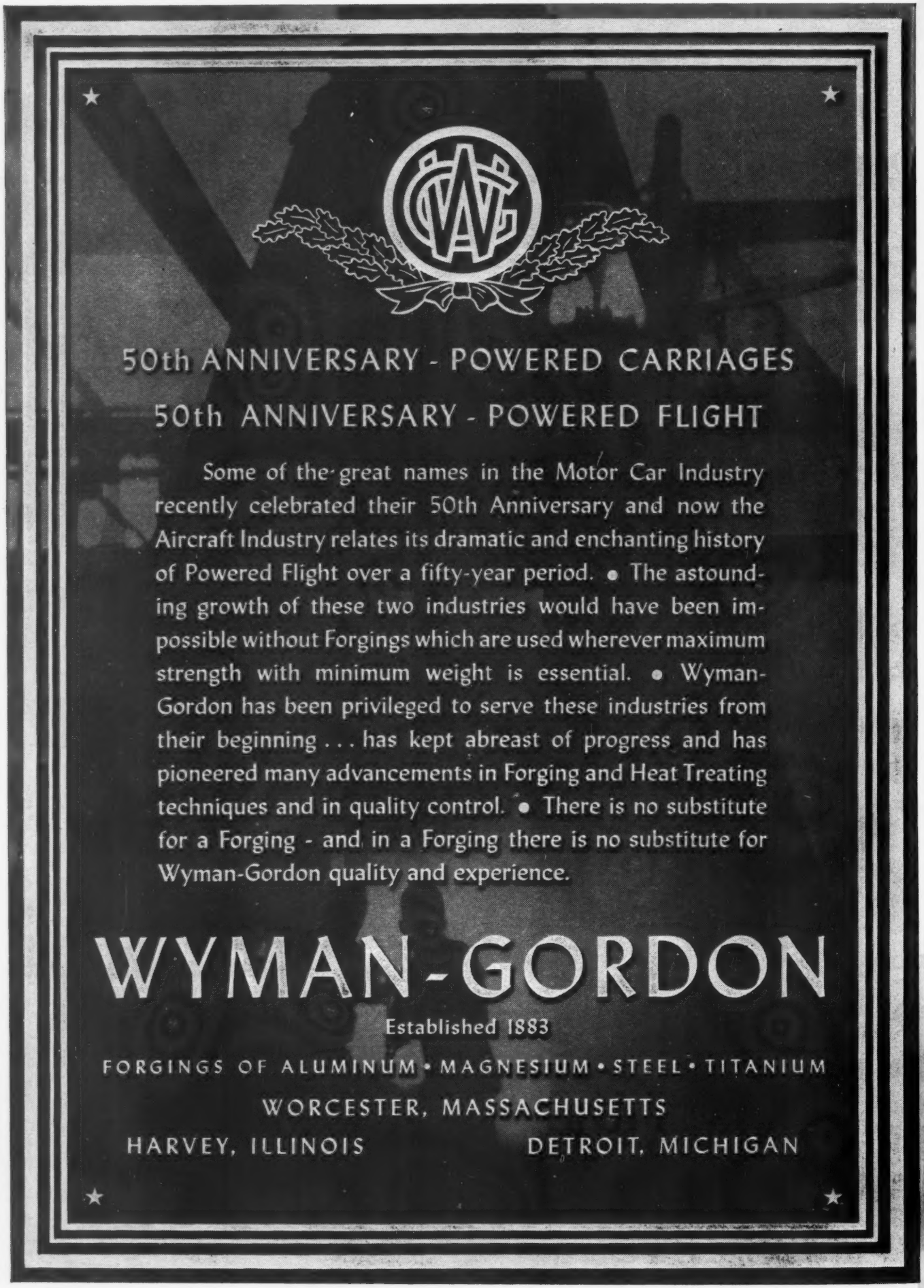
TWIN COACH AIRCRAFT DIVISION MAKES ASSEMBLIES FOR
GRUMMAN S2F AND UF, BOEING B-52, PIASECKI HUP, REPUBLIC F-84F, AND CLASSIFIED EXPERIMENTAL AIRCRAFT TYPES



50th ANNIVERSARY - POWERED CARRIAGES

50th ANNIVERSARY - POWERED FLIGHT

Some of the great names in the Motor Car Industry recently celebrated their 50th Anniversary and now the Aircraft Industry relates its dramatic and enchanting history of Powered Flight over a fifty-year period. • The astounding growth of these two industries would have been impossible without Forgings which are used wherever maximum strength with minimum weight is essential. • Wyman-Gordon has been privileged to serve these industries from their beginning . . . has kept abreast of progress and has pioneered many advancements in Forging and Heat Treating techniques and in quality control. • There is no substitute for a Forging - and in a Forging there is no substitute for Wyman-Gordon quality and experience.

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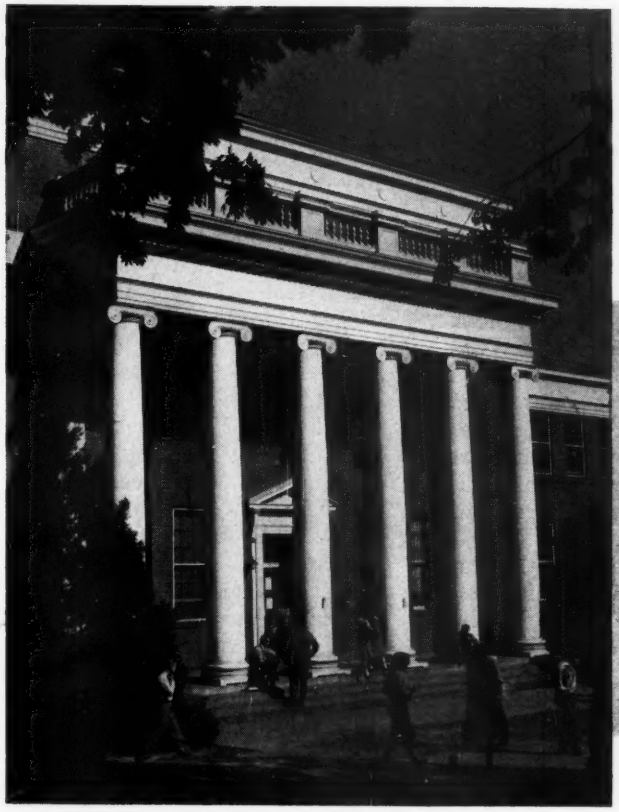
Bay it was twenty below zero with five feet of snow on the ground. When I left it was summer and everyone was swimming. There's nothing boring about the work and there's more to it than the three-hour teaching sessions at night. During the day I counsel students, give exams, prepare lectures, carry on a correspondence about each pupil with the head of my department back at College Park, and I help out with the regular Air Force Education program. I found the best students to be at the isolated bases like up in Iceland. That's to be expected for there isn't much else to do but study. But all of them are more serious than the undergraduates you find back in the States. They're not kidding when they sign up for classes during their off-duty hours and it's hard work to keep up with an intensified eight-week semester course."

The University of Maryland Overseas Program is probably the most unique adult education plan in existence. It is neither an extension course nor a correspondence course. It is a full-fledged university program for the US Armed Forces in the North Atlantic Area, Europe, and North Africa. It offers a complete range of classes taught by qualified university professors and instructors, entitling the students to full university credits towards a degree. Any member of the US Armed Forces, dependent, civilian personnel, and other nationals when sponsored by an American or allied agency, may also enroll. Three types of university degrees are obtainable: Bachelor of Science in Military Science, Bachelor of Science in Military Affairs, and Bachelor of Arts in General Studies. It's possible to work toward other University degrees but the sequence of courses prohibits the completion of all degree requirements overseas.

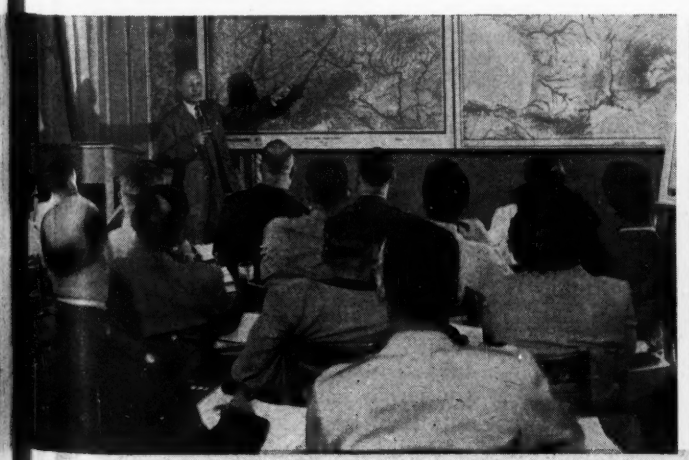


**Some Maryland students never see their alma mater. Here's what one College Park building looks like.**

"Before I got here I wondered how this program worked," said Dr. R. N. Stromberg, an assistant professor of history. "I came over for two years to teach history and also to do a little studying myself. I wondered how my pupils could get all the courses they need for their degrees. You can't offer a full university series at every teaching center. There are ninety of them in the fifteen different countries. Then I discovered that the university comes to the students and not the students to the universities. Every eight weeks my wife and I move to another center. Every semester the instructors and professors play musical chairs when they move to a different base and offer their special courses. A pupil signs up for his quota of classes each semester and in three years, or sometimes less, he can get all the courses he needs for his degree, assuming he had some college before going overseas.

"We teachers love it," Dr. Stromberg went on. "I've been able to meet the top European men in my field.

*(Continued on following page)*



**Dr. Van Royen's geography class in Wiesbaden.**

**Maryland students at Erding Air Depot, in Germany.**

I've had access to research and libraries I never thought I'd see." What Dr. Stromberg didn't add was that he is one of the top men in his field—English history. His new book, "Religious Liberalism in 18th Century England," was recently published by the Oxford University Press.

In London, while he was instructing at South Ruislip and Bushy Park, both bases of the 7th Air Division of the 3d Air Force, Dr. Stromberg took his students to Parliament, to Westminster Abbey, to all the hallowed spots where history was and is made. When he was teaching at Lakenheath he arranged a series of forums at nearby Cambridge where his students discussed mutual problems with British students.

Another teacher who likes the program is Dr. Josephine Bauer, another member of the faculty of the University of Maryland. She came to London in 1951 to work for her Ph.D., which she received at Maryland last year. While in England she taught English at Bushy Park and South Ruislip for airmen who were working for their degrees.

To Dr. Bauer, London is the ideal place to teach English. She takes her students of English literature to the Old Vic when they're studying Shakespeare, to the Cheshire Cheese when they're reading Dickens, and so on.

"You won't believe it, but I was once the young man with a horn," said the Air Inspector of the 3d Air Force. "I played with a band to earn tuition money while I was studying music and composition at Brigham Young University. I was halfway through my junior year when war broke out. I didn't get back to school until a year ago—more than twelve years later—when I was stationed in the UK. Now I'm working for two degrees, and I hope to get my first one in about a year."

Leaning back in his chair, Lt. Col. Jack L. Tueller looked up at the ceiling and went on reflectively, "You should see us at home. Two of my daughters—they're nine and eight—study at the same table with me. My wife and eight-month-old daughter kibitz. That's on the nights I'm home. Two nights a week I take English history from Dr. Stromberg. I just stay on the base after I finish at the office. Classes start at 1800 and finish at 2100. Next semester I'm taking military logistics. My greatest problem is that I get called out on field trips—that's what also comes of being one of the few jet fighter pilots at headquarters—and sometimes I miss a class . . .

"Why did I go back to school? Well, I'm a Regular and I know that education and a university degree will have a bearing on my future. But even more important, I think it'll make me better in any job I'm on."

All the instructors don't come from Maryland. And in the UK alone there are thirty-seven locally-recruited instructors. The regular staff also includes instructors from other universities in the States, most of them Rhodes scholars and US Fulbright exchange professors. In other countries where the program is operating, the faculty is augmented by local experts. For example, in Heidelberg, instructors in German history and the German language come from the University of Heidelberg.

From 1949, when the program was begun by the Armed Forces, to the end of 1953, more than 35,000 students had enrolled in more than 63,300 classes. This odd proportion is caused by students taking more than one course at a time. Although it is generally recommended that only one subject be handled in one semester, many of the students are so hard-working that they can take two.

One of these is M/Sgt. John D. Dillon, Jr., of East Hartford, Conn., who is on the Staff Finance Section of the 7th Air Division. Dillon takes second term Spanish on Monday, Wednesday, and Friday nights; Friday night is voluntary practice conversation. On Tuesday and Thursday nights he has classes in American political history. He wants to get his degree before he leaves England. But if he doesn't he'll put in for "Operation Bootstrap" and get his degree on the campus in the US.

Under "Operation Bootstrap," a member of the Air Force can apply for temporary duty for his last semester or six months of university work or for up to a year of work at the graduate level. If approved, and it generally is when the man is eligible for rotation to the US, the government pays his regular salary, but no *per diem* and no tuition. Last year there were more than eighty military students, from airman to colonel, working towards their degrees at College Park and almost as many at other universities.

M/Sgt. George MacLeod of the Petroleum Section of the 3d Air Force is typical. He was graduated from high school in his home town of San Bernardino, Calif., just before the war started. He was sent to UK in June 1952 and started attending the University of Maryland that same month. Now he is taking English history on Monday and Wednesday nights and French on Tuesday and Thursday nights. By extending his overseas service for an additional year Sergeant MacLeod hopes to complete everything but his last six months of university. Then he plans to go to a California university under "Operation Bootstrap," to get his degree.

Under the new regulations the cost of education is mainly borne by the

*(Continued on page 79)*

**Sky for a ceiling and sand for a floor—in Maryland "classroom" in Libya.**

**Airmen register at Freising, Germany.**

# America's Knights of the Sky...

*The Spartan Band that held the pass,*
*The Knights of Arthur's train*
*The Light Brigade that charged the guns,*
*Across the battle plain*
*Can claim no greater glory than*
*The dedicated few*
*Who wear the Wings of Silver*
*. . . on a field of Air Force Blue.*

## For Fellowship...High Adventure and a Proud Mission... wear the wings of the U. S. Air Force!

In days gone by, young men in shining armor ruled the age. Today, a new kind of man rules the age—America's Knights of the Sky, the *Air Force Pilots!* They rule from on high, in flashing silver-winged Air Force jets . . . a gallant band that all America looks up to! Like the Knights of old, they are few in number, but they represent their Nation's greatest strength.

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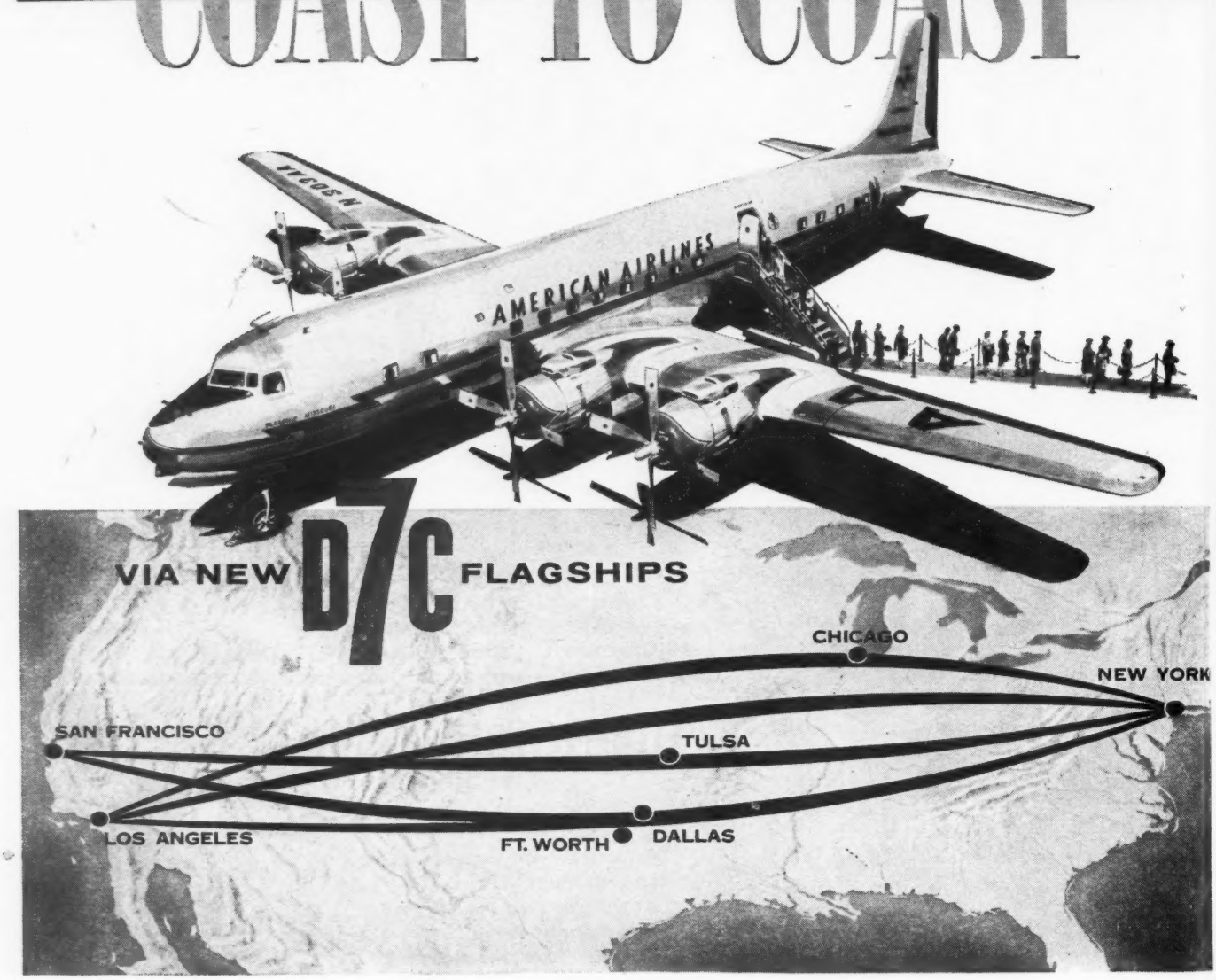


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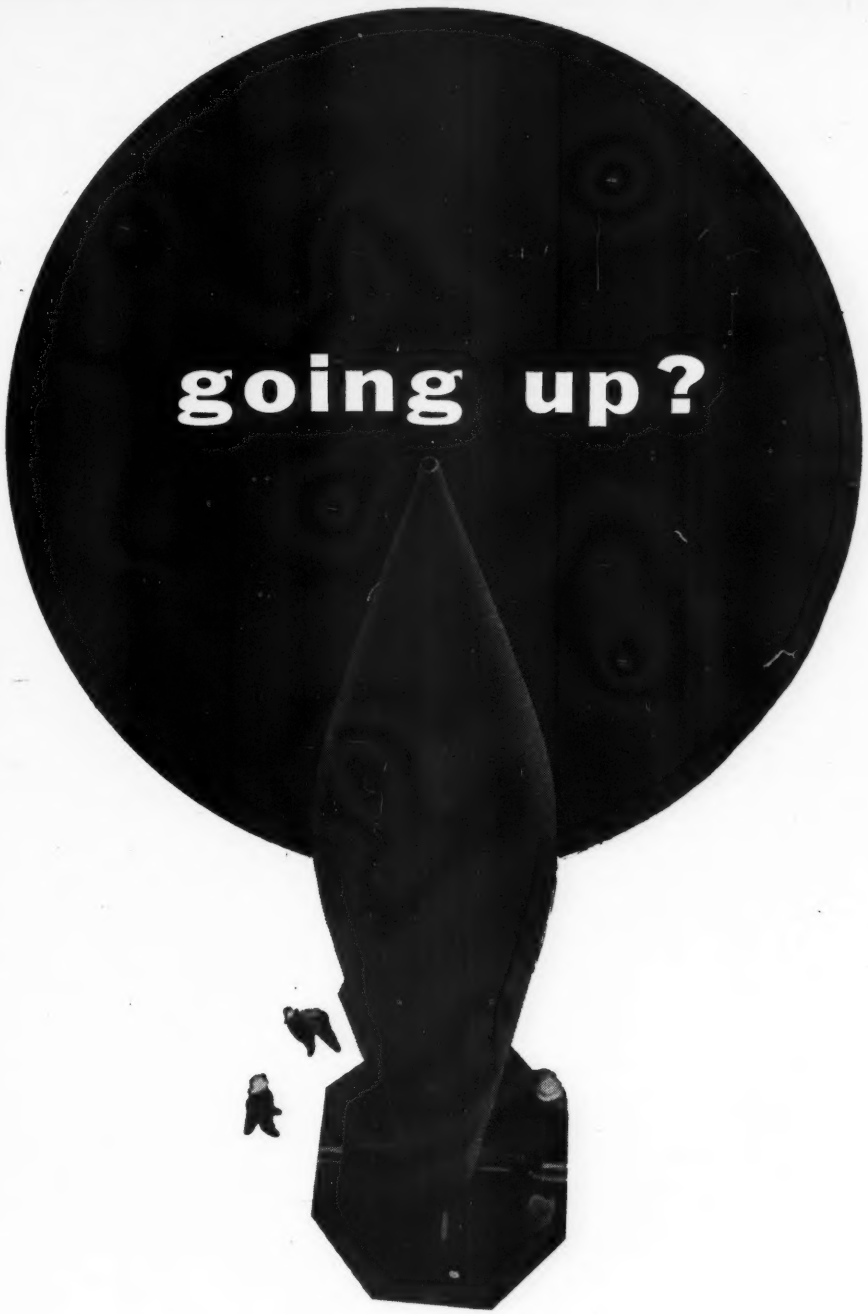
At South Ruislip, at 3d Air Force headquarters, the big man on the "campus" is Sgt. Clint Schroeder, of Almot, Ill. He is carried in the T/O as Education NCO for the base, but in practice he is known as "The Dean." During his two years on the job he's seen the program grow from a point where classes were held in the latrine in a British primary school and in vacant rooms in the officers' club where the instructor had to compete with a dance band, to the new Recreational and Education Center, expressly designed for the Maryland courses and for the adult high school.

"The Dean" proudly shows off the six classrooms, his office and lounge, and the library. In his office he maintains files on each student—South Ruislip averages 165 U. of Maryland students per semester. The files include the student's previous educational record, correspondence with College Park on his progress, and records of the student's achievements. In the office, "The Dean," with the help of Dr. Mason G. Daly, the Assistant Director of the University of Maryland Overseas Program, and other members of his staff, counsels the students. Correspondence is carried on with either the University of Maryland at College Park or any other university the student wishes to attend on "Operation Bootstrap" if he gets rotated home before finishing his courses. So far, almost one hundred degrees have been awarded overseas.

Sergeant Schroeder is also "principal" of the tuition-free night high school. It is a branch of the London Area Central High School for US Dependents. By successfully completing high school any airman can qualify for entrance to the university. As both "principal" and as "dean" Sergeant Schroeder's hours are from 0830 to 2200, five nights a week. However, he explains, he isn't working all of that time. Some of it he spends attending classes himself because he, too, is working for his degree.—END

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• To assist in obtaining and maintaining adequate airpower for national security and world peace. • To keep AFA members and the public abreast of developments in the field of aviation. • To preserve and foster the spirit of fellowship among former and present members of the United States Air Force.

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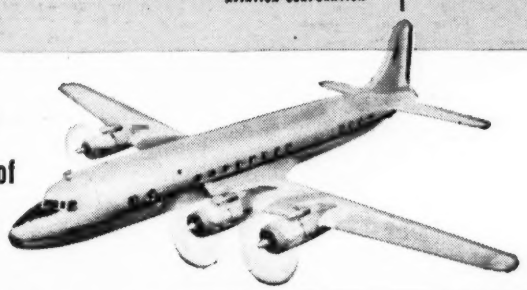

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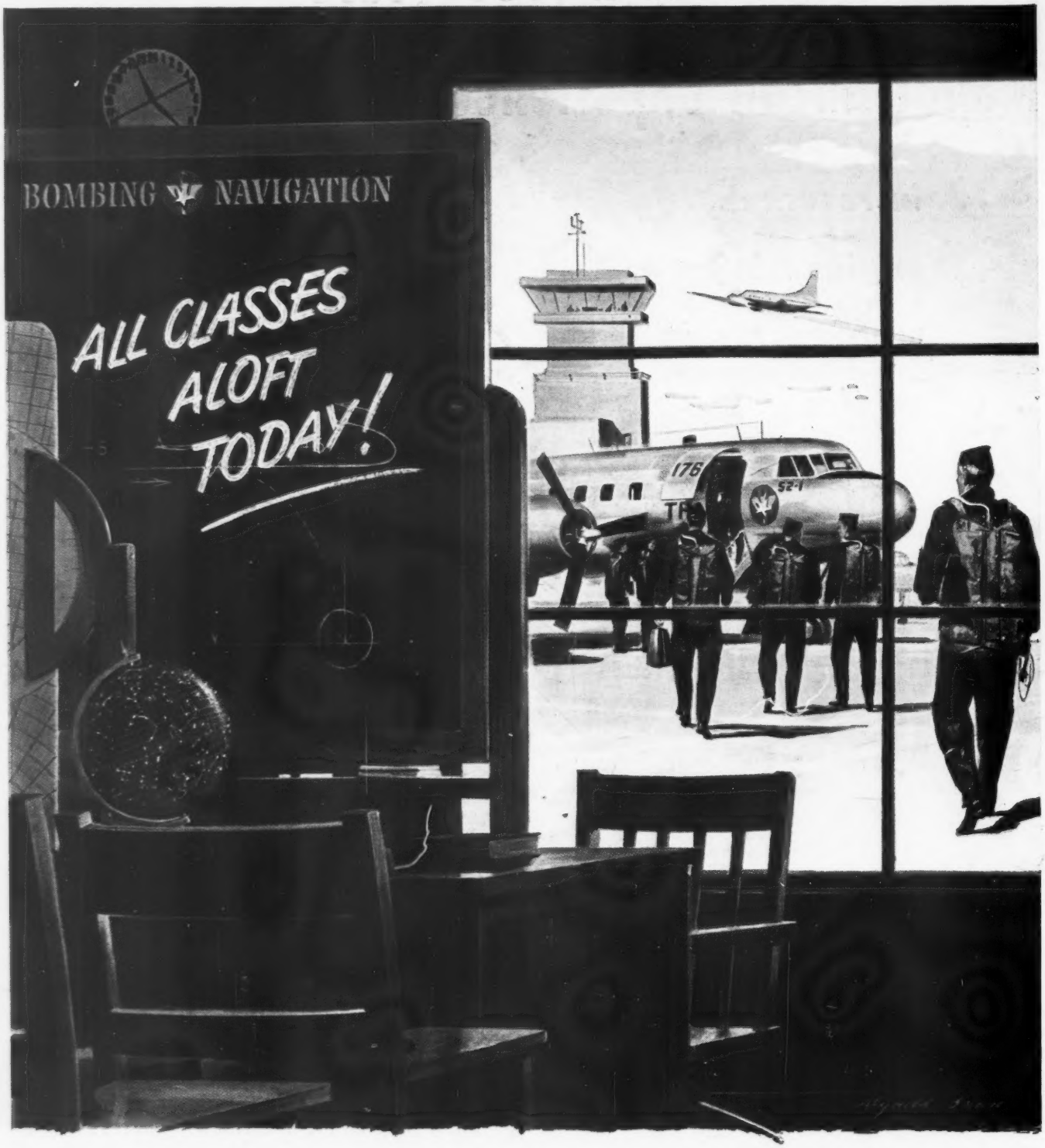


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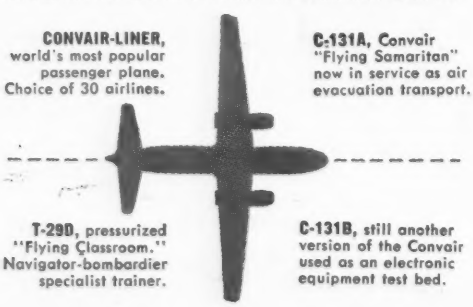

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